



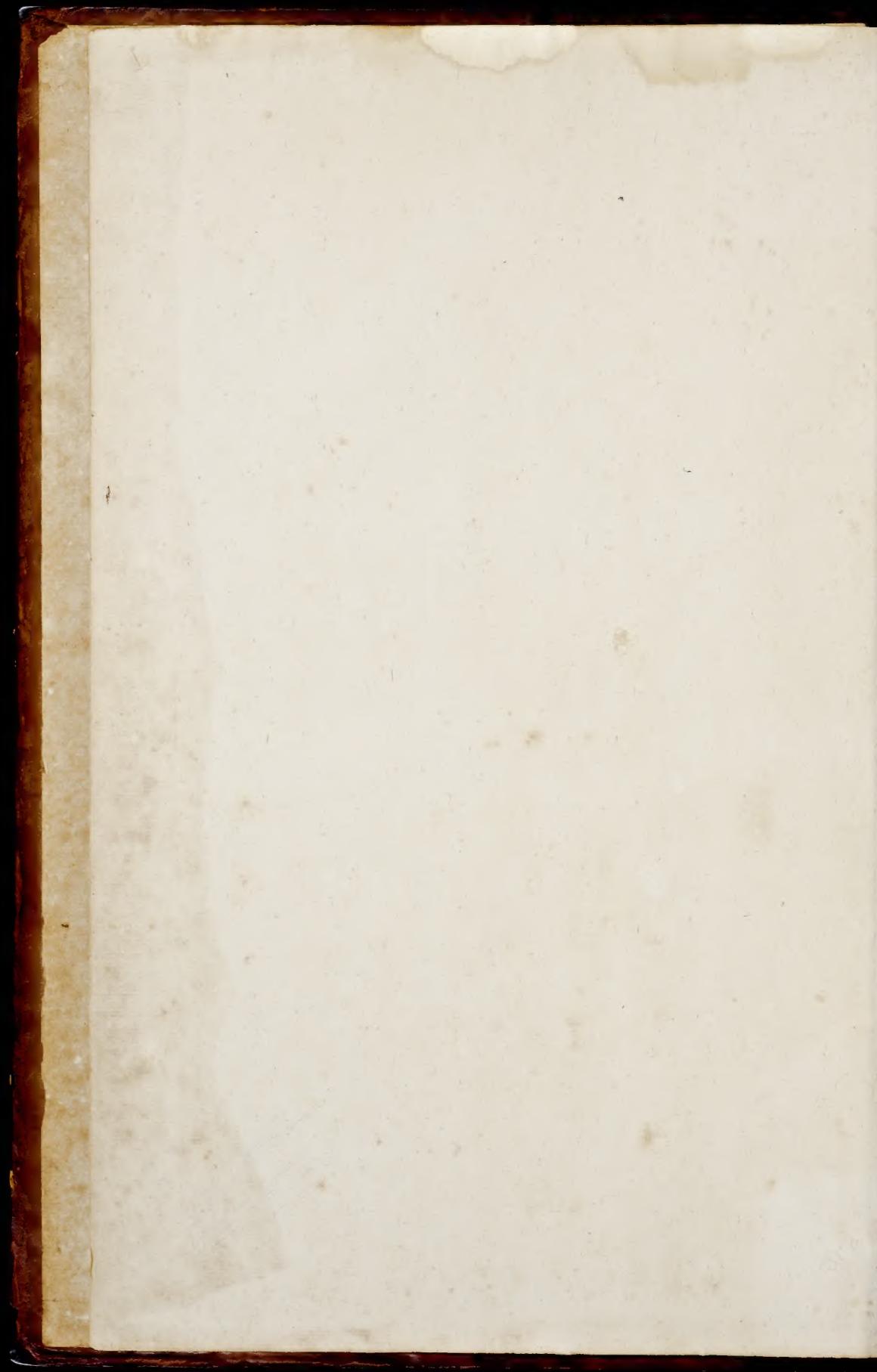
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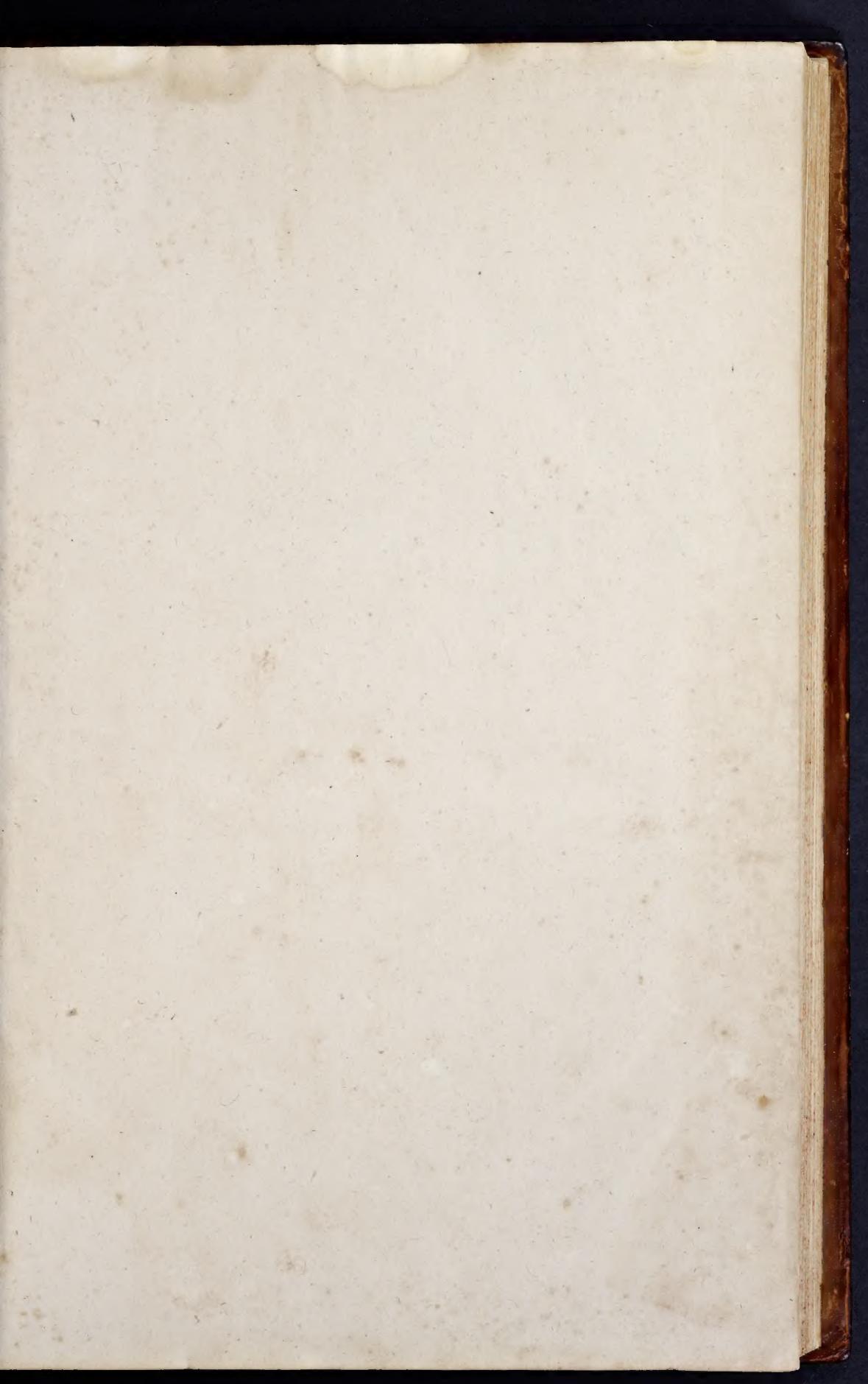
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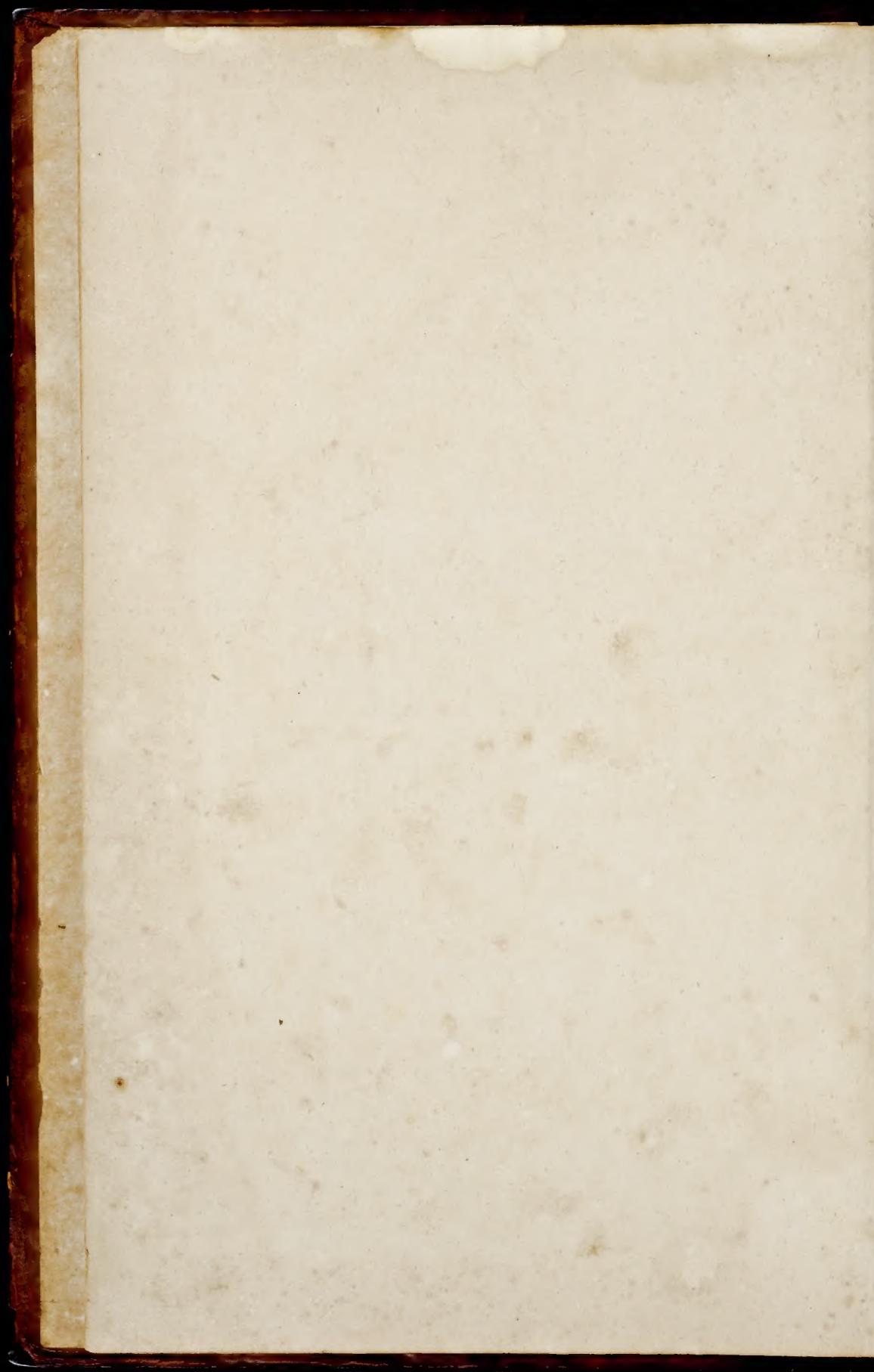
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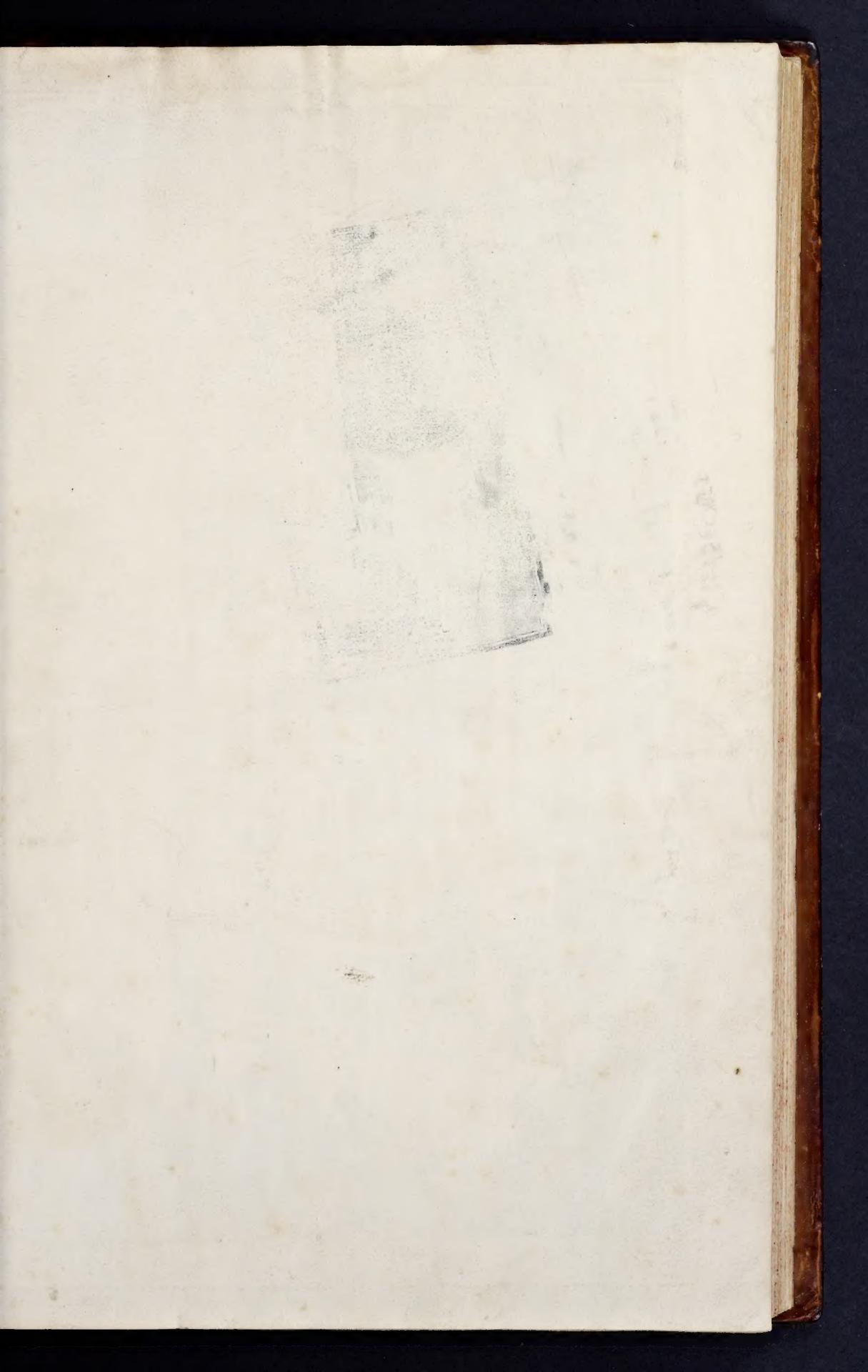
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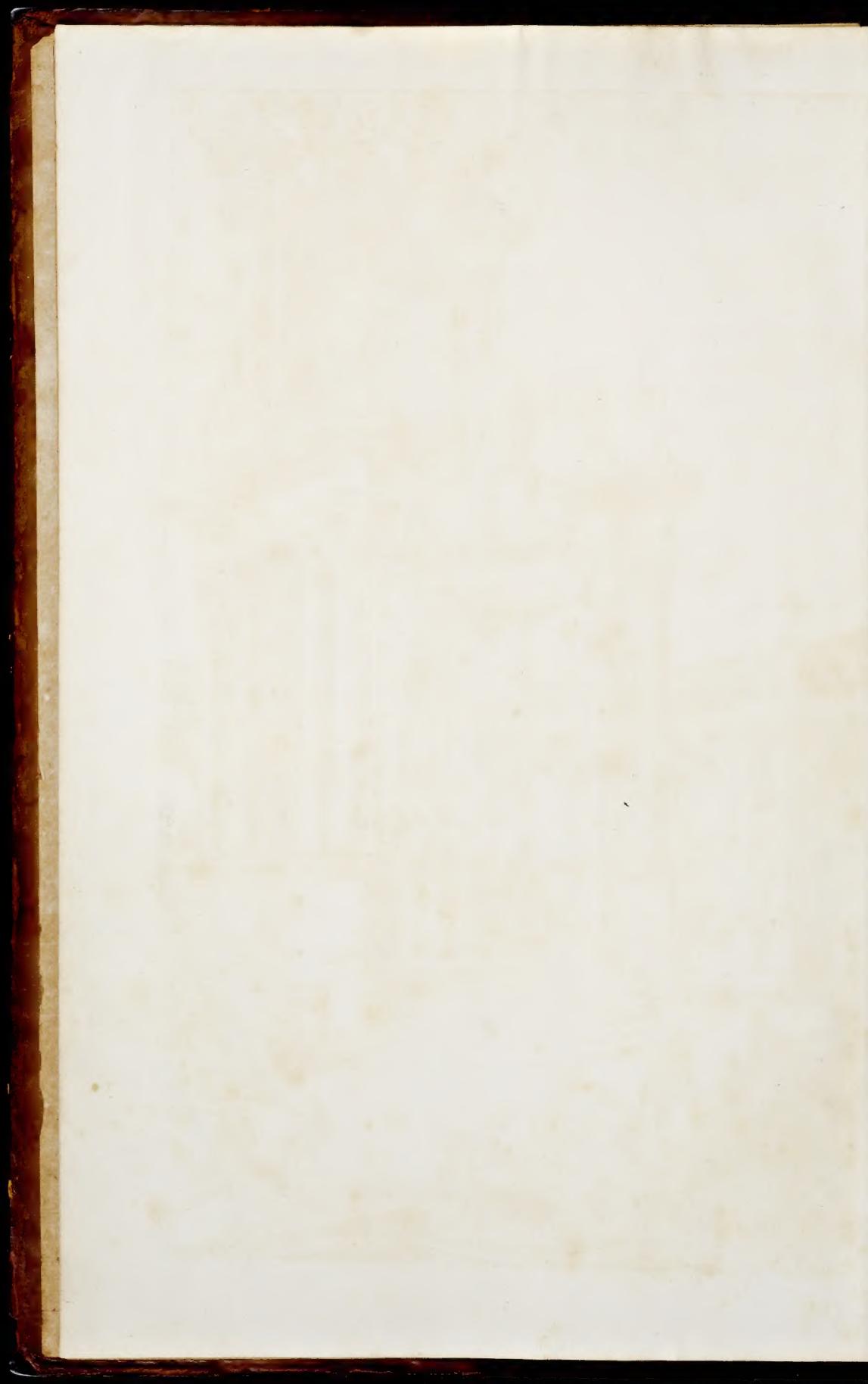
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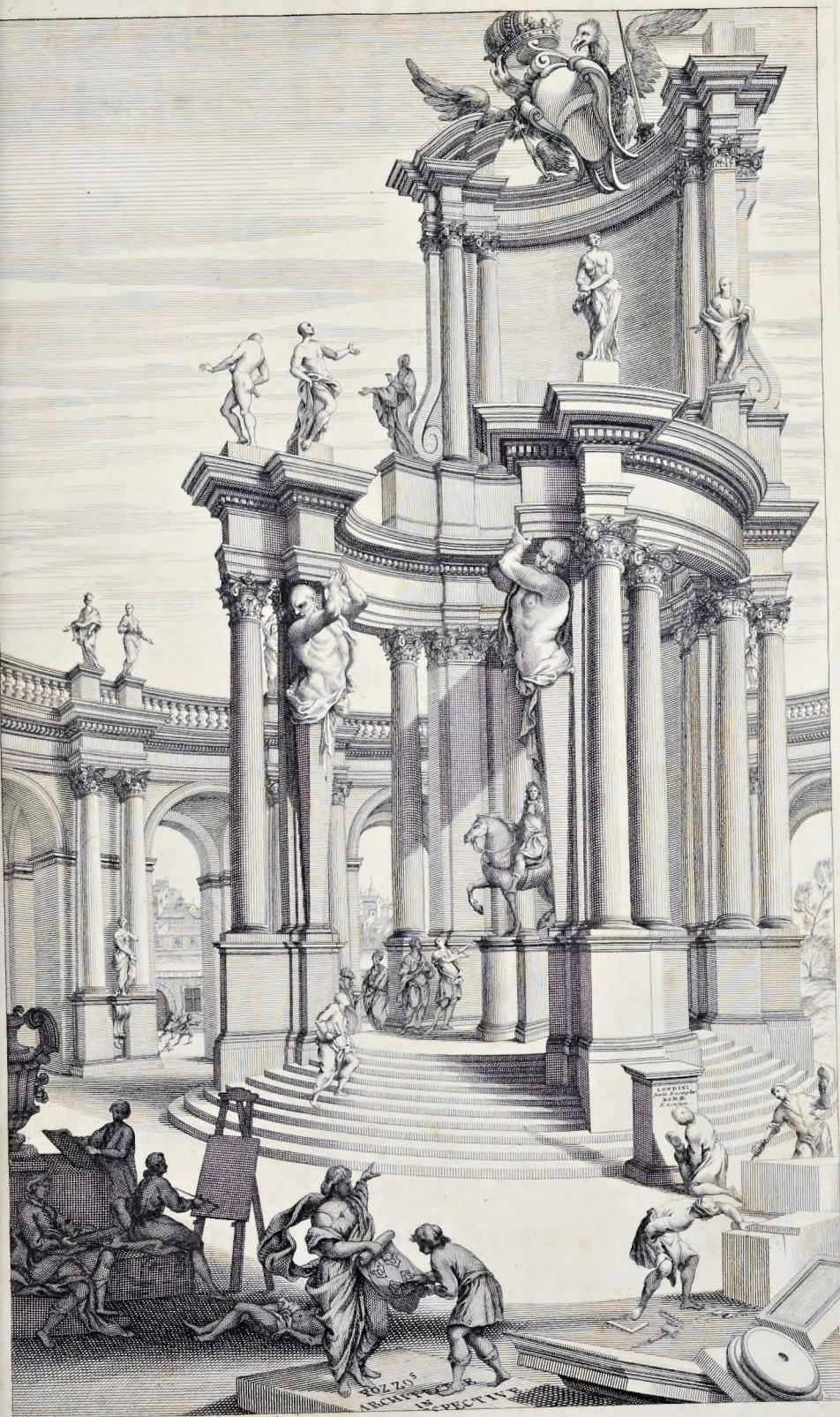


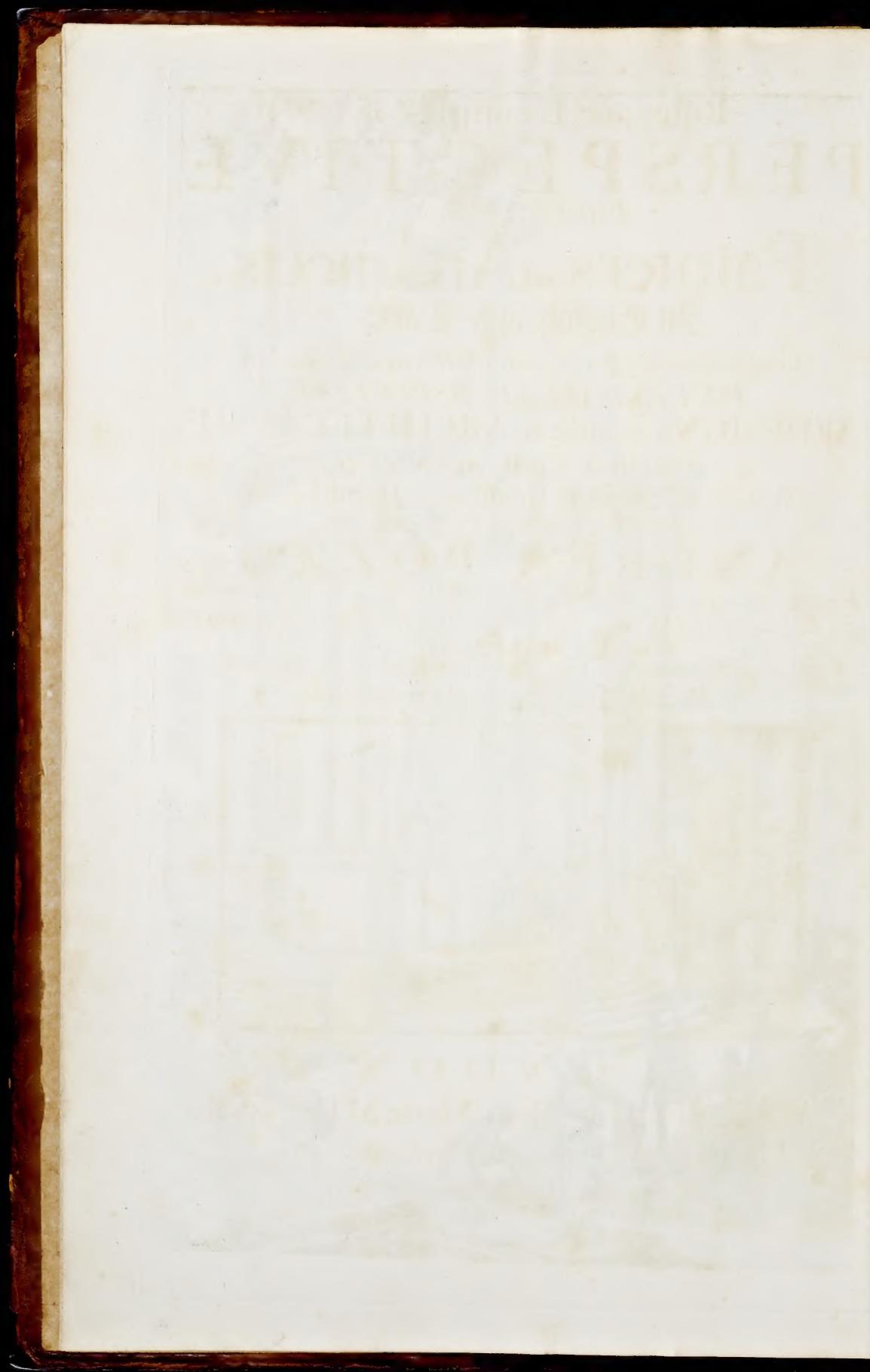












Rules and Examples of
PERSPECTIVE
PROPER FOR

Painters and Architects, etc.

In English and Latin:

Containing a most easie and expeditious Method to

DÉLINEATE in PERSPECTIVE

All DESIGNS relating to ARCHITECTURE,

AFTER A NEW MANNER,

Wholly free from the Confusion of Occult Lines:

BY THAT GREAT MASTER THEREOF,

ANDREA POZZO, Soc. J. S.

Engraven in 105 ample folio Plates, and adorn'd with 200 Initial Letters to
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By John Sturt.

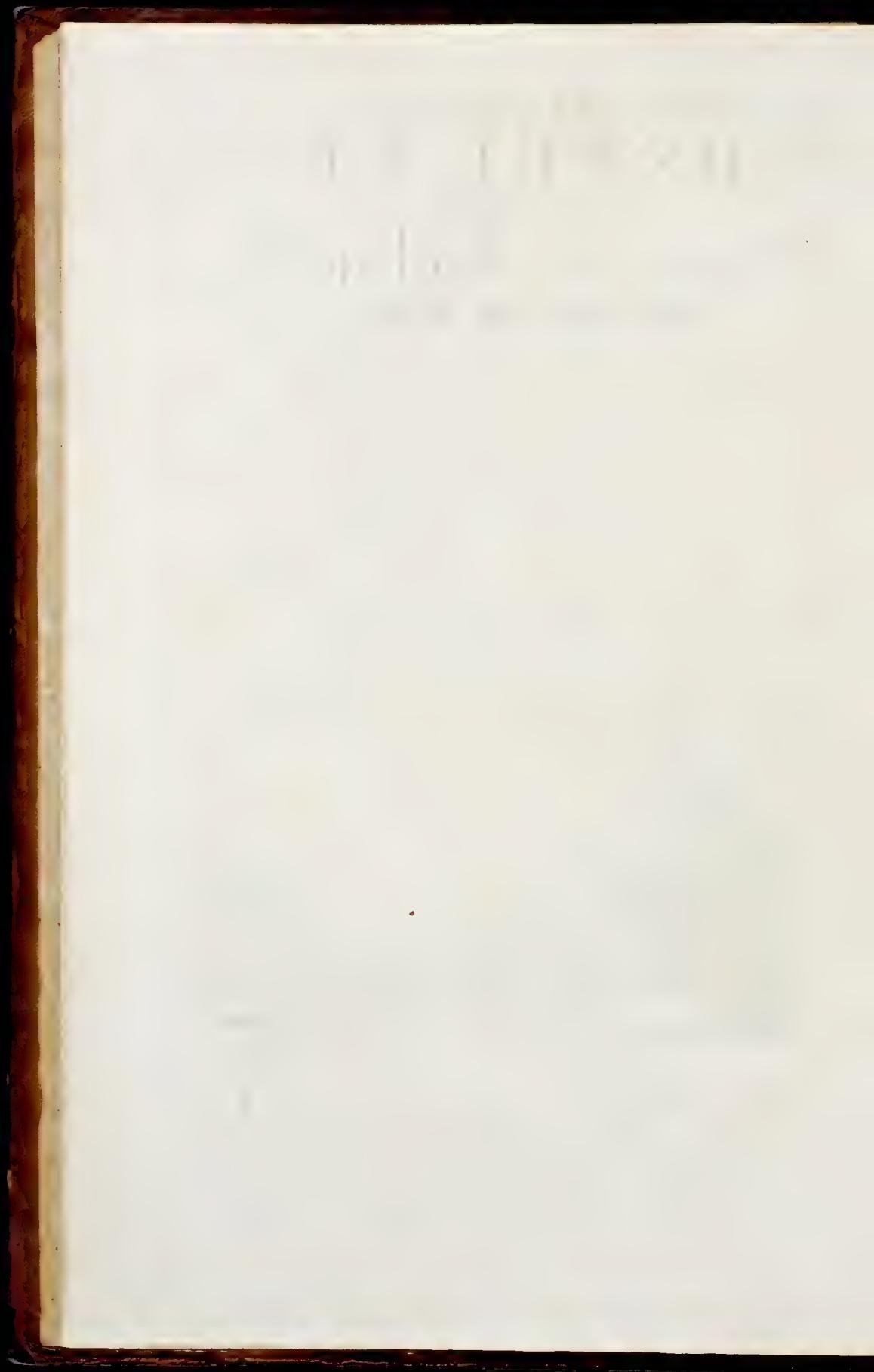
Done into English from the Original Printed at Rome 1693 in Lat. and Ital.

By Mr John James of Greenwich.



LONDON:
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*Sold by John Sturt in Golden-Lion-Court in
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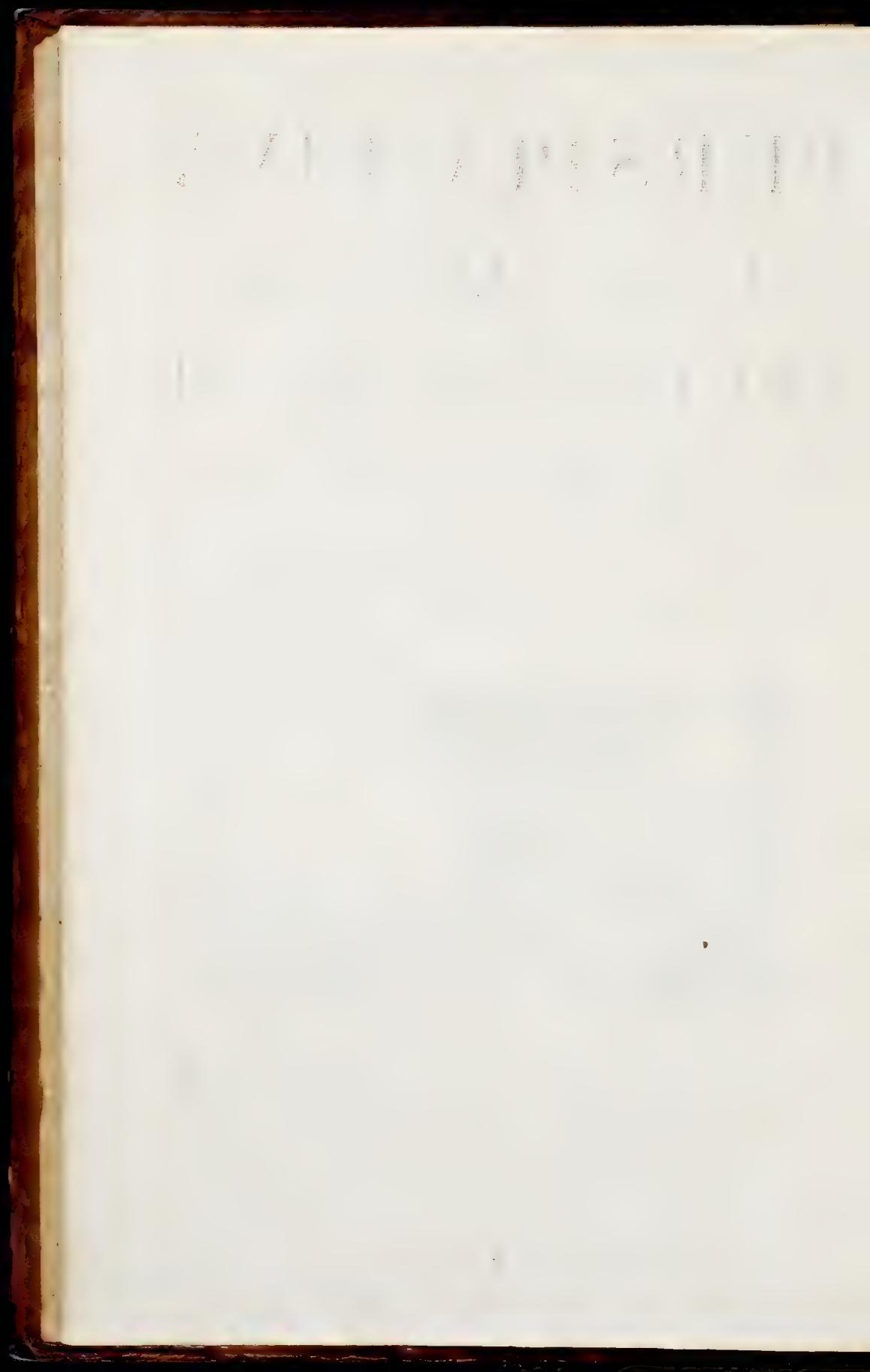
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ET
ARCHITECTORUM,
ANDREÆ PUTEI,
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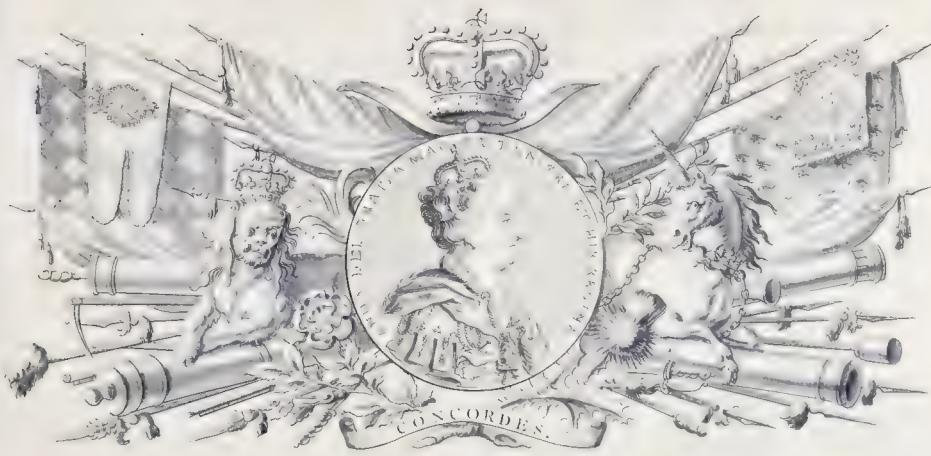
In quâ docetur Modus expeditissimus Delineandi
Opticè omnia quæ pertinent ad Architecturam.



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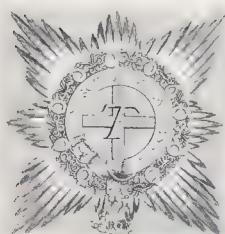
Juxta Exemplar ROME excusum, MDCCXIII.
Ex Sculpturâ Joannis Sturt, et ejusd. Curâ adornata:
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TO
Her most Sacred Majesty,
QUEEN ANNE.

May it please your Majesty!



HE Condescension of the late Emperor
of Germany to patronize this WORK
in the Original, could not have incited
me to the Presumption of laying the
Translation at Your Royal Feet; had not the Art of
PERSPECTIVE, of which it treats, been so nearly ally'd

A to

DEDICATION.

*to the Noble Arts of PAINTING and ARCHITECTURE.
The First of these Your Majest^y has been pleas'd to honour,
as well in expressing a Satisfaction with the Performances,
as in extending Your Royal Munificence to that great
Master thereof, Signor Verrio.*

*AND although Affairs of higher Consequence have
hitherto deferr'd Your Majest^y's Commands for Raising
WHITE-HALL from its Ruins ; yet has not
Architecture been without Encouragement, under
Your Majesty's Most Auspicious Reign : Witness the
great Dispatch lately given to those Noble Fabricks of
S. PAUL'S, **Greenwich-Hospital**, and **Blenheim**.*

*THESE seem to presage, that a Time is coming, when,
through the Blessing of Peace, and the Happy Influence
of Your Majest^y's Government ; **WHITE-HALL**
shall become a Structure worthy its Great Restorer,
and its Name as much Celebrated among Palaces, as
Your Royal Virtues are Illustrious among Princes : When
Your Majesty's Subjects shall exert themselves as much to
their Country's Honour, in the Arts of Design, and
Civil Architecture ; as they have already done in the
Art Military, and Personal Valour.*

*PRELIMINAR^I to such Happy Season, I presume this
Art of Perspective made Practicable, may not be
improper ; being One of the most Useful, though hitherto
the most Obscure and Confus'd, of all the Lineary Arts.*

I there-

DEDICATION.

*I therefore, with all Submission, beg Leave to supplicate
Your Majesty's Pardon for this Address, and Your
Gracious Protection of this Specimen of English Graving;
to which if Your Majesty vouchsafe Your Royal
PATRONAGE, it will effectually animate the future
Endeavours of,*

May it please Your Majesty !

Your Most Obedient Subject,

J. STURT.



P R E F A C E

TO THIS

T R A N S L A T I O N.



OTWITHSTANDING the *Art of PERSPECTIVE* must be acknowledg'd so highly and indispensably requisite in the Practice of *Painting*, *Architecture*, and *Sculpture*; that in the First of these especially, nothing commendable can be perform'd without its Assistance: Yet such have been the Difficulties and Obscurities met with in the first Attempts, and so great the Perplexity and Confusion of Lines in the Practice thereof; that the best Instructions, hitherto made English, have invited very few to such a Prosecution of this Study, as might render their Performances of this kind, truly valuable.

THIS something unaccountable, that, among so many learned Persons as have handled this Subject, *Priests*, *Architects*, and *Painters*; very few, if any of them, have given Directions proper for shunning that Disorder and Confusion of Lines, which, in most Instances, must necessarily attend the Execution of their Rules: In all or most of which, the whole Space for the Performance is confin'd between the Lines of the Plan and Horizon; which, where the Scale is small, and the Height of the Eye not very much advanc'd, renders the Work exceedingly confus'd; and where those Lines are coincident, (which frequently happens) the Method becomes utterly impracticable.

THIS Author's great Experience in the Practice of *Perspective*, having furnish'd him with excellent RULES for Shortning the Work, and Obviating the foremention'd Difficulties; he has here very generously imparted them, and especially the latter, in the Tenth and Eleventh Figures. And tho' on Perusal of the first three or four Plates, this Method may possibly seem the same that some others have before made use of; yet whoever shall diligently observe and copy the Rules and Examples of the succeeding Figures, must necessarily acknowledge the great Advantage this has in a Perspective-Plan and Upright, clear and distinct; whence the finish'd Piece is deduc'd, without the least Incumbrance of the Work. The Explanations of the Rules here given, are short and instructive; and the Architectonical Designs produc'd to exemplify them, Noble and Magnificent.

THIS Manner of Designing, where the Perspective is drawn on several Ranges of Frames one behind the other, and such Scenes of Theaters whose Grooves lie oblique to the middle Line, is also here laid down: And by our Author's Method, *Horizontal Perspective*, or that of Ceilings, is render'd less difficult than the *Vertical*, or that against

P R E F A C E.

an upright Wall. Upon the whole, nothing seems wanting that may make a Work of this nature complete; unless what concerns Designs which are either Circular, or abound with many Columns: For the Performance whereof, the Author, as he promises in the Sixty-fifth Figure, has, in a SECOND Volume, given a Rule more proper for the purpose; which also may possibly be made English in due time, if this Part meet with Encouragement.

WHAT the Author once intended should make a Part of that Second Volume, he afterwards inserted in the Ninety-third and following Figures of this Book: In the last of which, particular Notice should be taken of his Conclusion; *That if Painters would not run into inextricable Errors, they ought as strictly to observe the Rules of Perspective, in designing the Figures of Men and Animals; as they do in painting Columns, Cornices, or other Parts of Architecture.*

THAT none therefore be discourag'd in their first Attempts, through the Brevity or Silence of our Author; (who, writing in a Country where the Principles of this Art are more generally known than with Us, had no need to insist so long on some things, as might be thought necessary to *Beginners*) we shall endeavour to speak as plainly as we can to a point or two, most liable to be misunderstood, or to prove a Stumbling-Block at the Entrance; and then add a Word of Advice to such as shall attempt the putting these Rules in Execution.

THE Author, in both his Explanations of the first Plate, has given some Account of what he would have his Reader understand, by *Designing in Perspective*; and a right Conception of this point being of great Use to facilitate the Work, we thought it not improper, to describe something more particularly, what is meant by the Art *Perspective*: but shall at present speak only of That, which, whether Vertical or Horizontal, is receiv'd on a Flat and Even Superficies; This being of much the more general Use, and, when rightly understood, renders the Difficulties of the Circular or Irregular Surfaces, easy and familiar.

PERSPECTIVE is the Art of Delineating, on a flat Superficies, as a Wall, Ceiling, Canvas, Paper, or the like, the Appearances of Objects, as seen from One determinate Point: For tho' in Works of great Length, Two, Three, or more Points of Sight are sometimes made use of; yet such may more properly be said to be Several Views conjoin'd, than One Piece of Perspective: Of which see the Author's Opinion, at the End of this Treatise.

IN Perspective, the Eye of the Beholder is esteem'd a Point, from whence Rays are suppos'd to proceed to every Angle of the Object. The Wall or Canvas to be painted (which we shall here call the *Section*) is imagin'd to intervene at right Angles to the Axis of the said Rays, and, by dissecting them, to receive the Appearance of the Object, in greater or less Proportion, as the Section is more or less remote from the Point of Sight. Our Author's Rule is, That the Distance of the Eye ought to be equal to the greatest Extent of the Object, whether in Length or Height: As, to view a Building that is a hundred

P R E F A C E.

hundred Foot long, and fifty high ; he would have the Distance a hundred Foot : To view a Tower sixty Foot wide, and a hundred and fifty Foot high ; the Distance should be a hundred and fifty Foot. This Distance is not strictly to be understood of the Space between the Eye and the Object, but of the Space between that and the Section, the Plan of which our Author calls the Line of the Plan, or Ground-line ; for it's often requisite, that the Section be plac'd at some Distance before the Object, on account of Projectures of Cornices, and other Parts of the Work that advance, as in the Eighth Figure.

THE Place of the Eye, with respect to its Height above the Ground, ought to be such, as is most natural and agreeable to the Object. Thus in *Architecture*, the Basements and inferior Parts of a Building are improper to be set above the Eye, and their Cornices and Entablatures have but an ill Effect when below it. *General Perspectives* indeed require the Sight to be taken at a Birds View ; and on other Occasions the Place of the Eye may be vary'd : but the best and most general Rule is, not to exceed five or six Foot Height above the Ground. The Height of the Eye above the Ground, thro' which a Line is drawn, call'd the *horizontal Line*, is set on by the same Scale of Proportion, as the Design bears to the real Work ; and the Point of Sight so plac'd therein, as may render the Object most agreeable. From the Point of Sight, either on one or both sides in the horizontal Line, you are to set, by the same Scale, the Distance you stand from the Section. And by means of these Points of Sight and Distance, and the Measures of the Parts brought on the Lines of the Plan and Elevation of the Section, by the same Scale ; all the Examples of this Volume are reduc'd into Perspective ; as is manifest on Inspection of the Figures.

WHAT we would add, by way of Advice, is,

I. **THE**AT you very carefully observe, what the Author understands by *Breadth*, *Length*, and *Height*, in his Explanation of the Fifth Plate, before you proceed to practise on any Figure ; otherwise you'll certainly misunderstand him ; especially in the Third Figure.

II. **THE**AT the Rules of the Tenth and Eleventh Figures be particularly regarded, for avoiding Confusion in the Plans and Uprights.

III. **THE**AT from the Disposition of the Perspective-Plans and Uprights, with respect to the finish'd Pieces in the Twelfth and many following Figures, you would observe, with what Dispatch the said Pieces may, without the Help of Compasses, be delineated by your Drawing-Square ; viz. the Perpendiculars from the Perspective-Plan, and the level Lines from the Perspective-Upright, or Section.

IV. **THE**AT you would accustom yourself in Works that have many Lines, to make the Perspective-Plans and Uprights for each Part distinct, so as to prevent all Danger of Confusion. Thus you may have one Plan and Upright for the Basement of a Building ; and when that is drawn on your finisht Piece, remove them, and place those of the Body of the House ; and when that's complete, do so by the Attick, &c. always observing so to place the Plan below, and the Upright on one side of your neat Draught,
that

P R E F A C E.

that your Drawing-Square may command each of them ; which will mightily shorten your Work.

V. **T**HAT the Author's Advice of taking the Figures in Course, be strictly follow'd in the Practice ; which will be a great means to render the Whole easy and pleasant.

THIS is the Sum of what we thought most proper to advertise you ; and have only this farther to request, That if any Mistakes may have escap'd the Pres' undiscover'd, as we well hope there are few or none, you will favourably correct and pardon them.

MONITA

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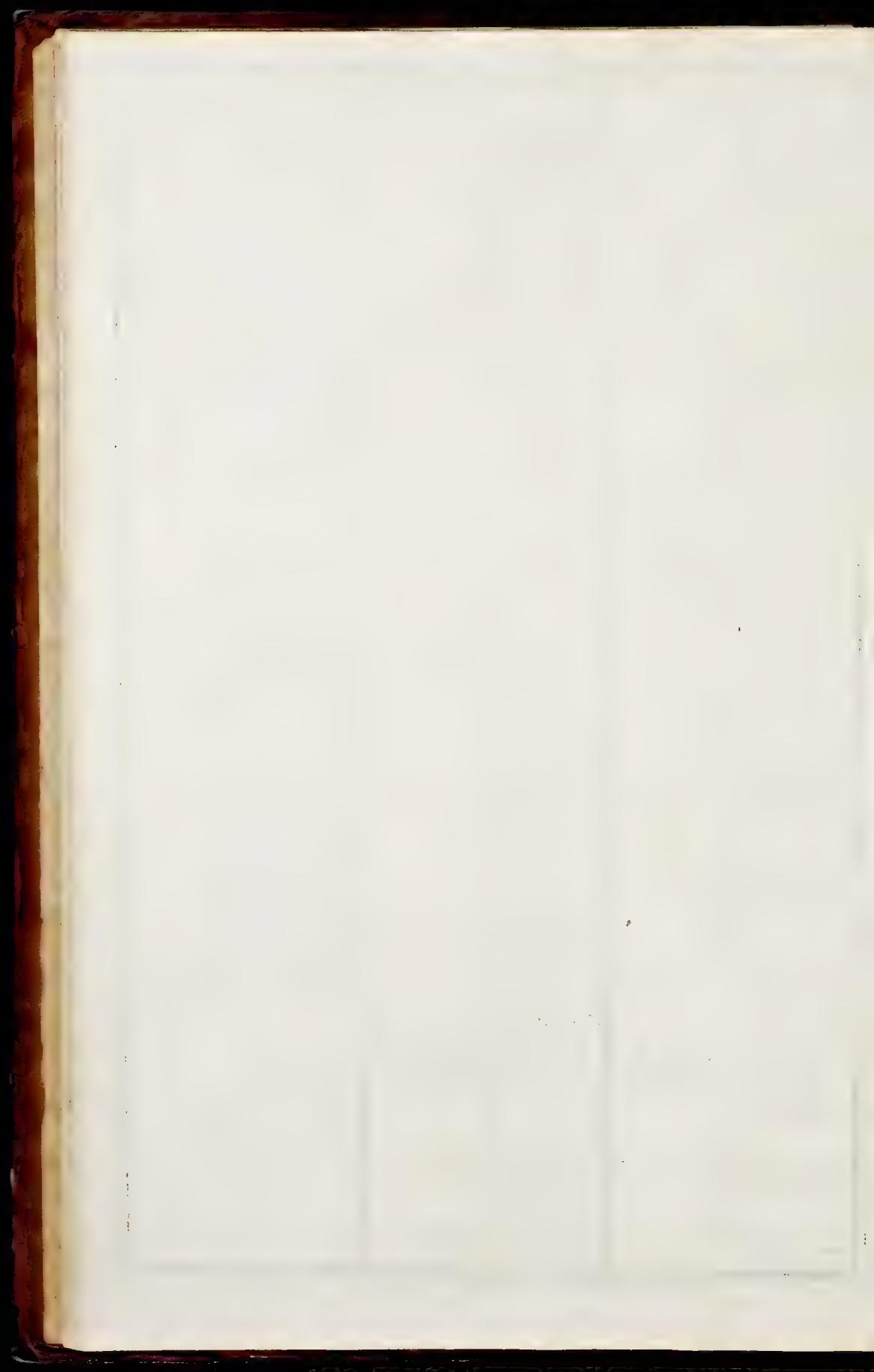
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MONITA ad TYRONES.



ONCINNITATEM ac symmetriam opticæ delineationes ædificiorum habere nequeant, nisi utramque mutuentur ab Architectura. Proinde necesse est, ut in istius graphide ac intelligentia te aliquandiu exerceas, donec uniuscunusque elevationis vestigium formare didiceris, ex eoque eruere sectionem totius longitudinis, ut in Opere toto videre est, præstern figuris sexagesima octava & septuagesima. Siquidem ex vestigio & ex sectione derivatur in opticas imagines congrua rerum singularium profunditas.

Subjiciam his consilium summi momenti ; videlicet, egregiè intelligas oportet figuram secundam, priusquam progrediaris ad tertiam, idemque de ceteris dictum velim ; nam singulas eo diffinimus ordine, ut que precedit, necessaria sit ad percipiendas eas que sequuntur. Si aliqua sint in explicatione, que initio non intelligas, ipsum schema sèpius diligenter inspicias ; ac vicissim si aliqua defint in schematibus, ex declarationibus ea supplebis. Lapsus verò quos deprehenderis, facile pro tua benignitate, mihi, ut spero, condonabis,

ADVICE to BEGINNERS.



HE Perspective of Structures here treated of, can have no Grace or Proportion, without the Help of Architecture. 'Tis therefore absolutely necessary, that you employ yourself for some time in Drawing, and the Study of that Art ; till you can readily describe the Plan of any Upright, and from thence project the Section or Profile, as is shewn through the whole Course of this Work ; and more particularly, in the Sixty-eighth and Seventieth Figures : Forasmuch as the proper Depth of each Part of the Perspective, is determin'd by the Plan and Profile thereof.

I shall add this one thing more, which is indeed of the last Importance ; to wit, that you endeavour to understand the Second Figure thoroughly, before you proceed to the Third ; and so of the rest : they being dispos'd in such Order, that the Knowledge of the preceding Figure is always necessary to a right Understanding of that which follows. If you meet with any thing which at first seems difficult in the Description, a diligent Inspection of the Figure may relieve you : And on the other hand, if you find not in the Figure every thing you desire, you may have Recourse to the Explanation. What Errors you discover in the Work, I hope you'll generously overlook and pardon.

A D

Lectorem Perspectivæ studiosum.



RS Perspectiva, oculum, licet sagacissimum inter sensus nostros exteriores, mirabile cum voluptate decipit ; eademque necessaria est illis, quibus in pingendo, tum singularis figuris positionem ac deformationem suam congrue tribuere, tum colores & umbras, magis vel minus intendere aut remittere, prout oportet, curæ est. Ad id autem sensim sine sensu illi pervenirent, qui solo studio Graphidis non contenti, singularis Architectura Ordinibus exactè deformandis assueverint. Nihilominus, inter multos qui opus hujusmodi magno impetu aggressi hucusque fuerunt, paucos numeramus, qui animum ipso statim initio non despondent, ob magistrorum librorumque penuriam, ordinatè ac perspicue docentium opticæ profectiones, à principiis hujus artis, usque ad omnitudinem perfectionis consummationem. Quum autem sentiam, longâ multorum annorum exercitatione, me non minimam facilitatem in hac disciplina mibi parasse : censeo Studiosorum voluntati me satisfactum, eorumque profectui confulturum, si methodos expeditissimas in lucem proferam, ad singulorum Architecturæ Ordinum opticæ delineationes perficiendas, adhibita communi regula, ex qua omnia linearum occultarum offendicula sustulimus. Deinde, si tempus & vires ad aliud Opus conscribendum Bonitas Divina dederit, profectiones quacunque absolvemus regula qua in praesentia uti soleo, ac multò facilior & universalior est regula communi & vulgata, quamvis hec sit fundamentum alterius. Itaque, Lector studiose, constanti animo negotium tuum suscipe ; ac lineas omnes tuarum operationum, ad verum oculi punctumducere, ad gloriam scilicet DEI O. M. tecum omnino decerne. Sic votis honestissimis, ut angkor tibi ac spondeo, feliciter poteris.

T O

The Lovers of Perspective.



HE Art of PERSPECTIVE does, with wonderful Pleasure, deceive the Eye, the most subtle of all our outward Senses ; and is very necessary to be known of all, who in Painting would give a due Place and Proportion to their Figures, and more or less Strength requisite to the Lights and Shades of the Picture. This might be insensibly attain'd, if Persons, not content with the Study of Drawing only, would accustom themselves exactly to delineate the several Orders of Architecture. Nevertheless, among many who have hitherto vigorously undertaken this Work, there have been but very few, who have not been in a manner quite discourag'd, through want of Masters and Books to teach them clearly and methodically the Rules of Perspective-Projections, from the first Principles of the Art, to the entire Perfection thereof. Wherefore, apprehending that by long and constant Practice in Works of this kind, I had acquir'd a Method to facilitate the same ; I judg'd it might be for the Satisfaction and Advantage of the Studious, to publish the shortest way for designing in Perspective the several Orders of Architecture, by a common and easy Rule, free from the Incumbrances of occult Lines. But if it please God to give me Life and Health to compose another Book, I shall therein shew the Method of putting Works into Perspective by the Rule I make use of at present, which is more easy and general than the common way, though this be the Foundation of the other. Therefore, Reader, my Advice is, that you cheerfully begin your Work, with a Resolution to draw all the Lines thereof to that true Point, the Glory of GOD ; and I durst predict, and promise you good Success in so honourable an Undertaking.

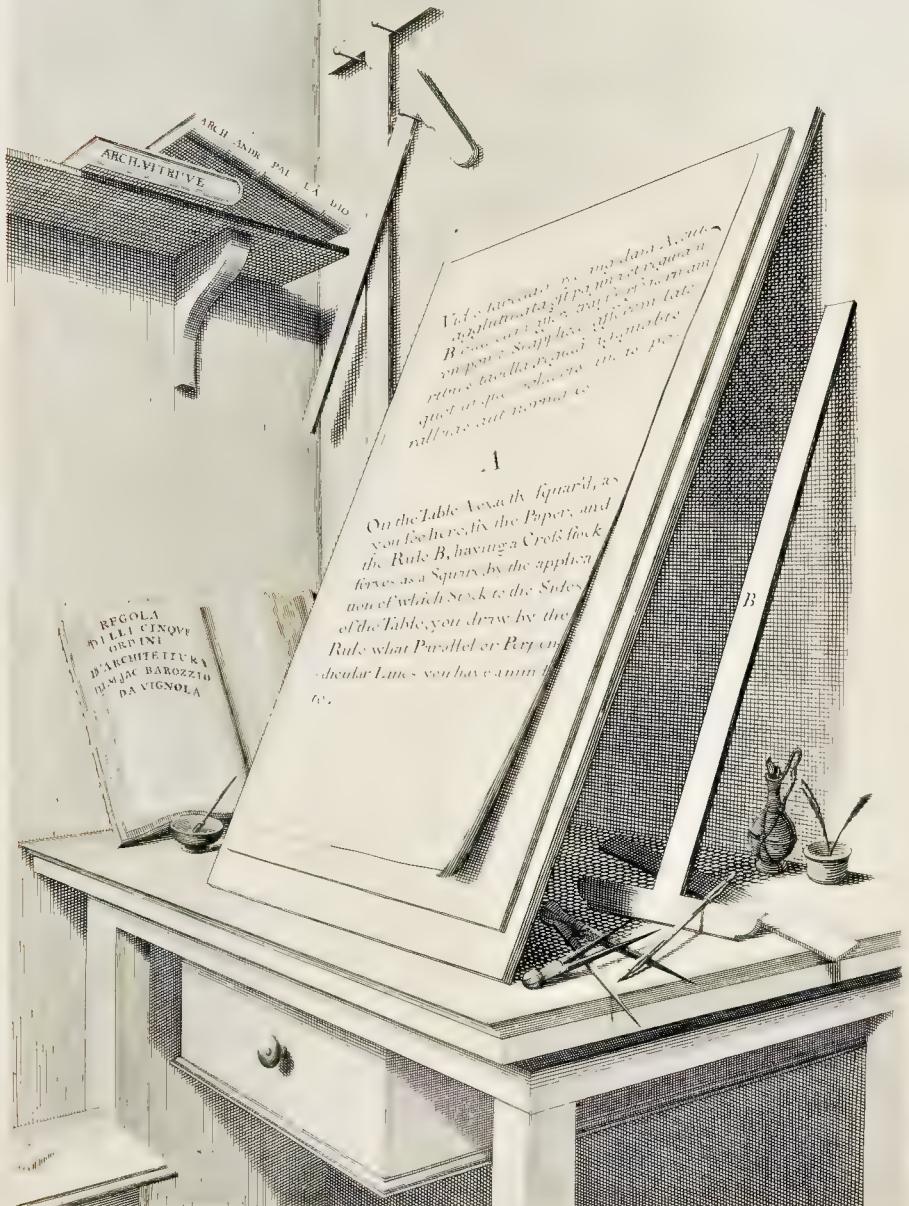
THE

Approbation of this Edition.



To the Request of the Engraver, We have
perus'd this Volume of PERSPECTIVE; and
judge it a WORK that deserves Encou-
ragement, and very proper for Instruction
in that ART.

*Chr. Wren,
J. Vanbrugh,
N. Hawksmoor.*



Videlicet ad perpendiculum et parangon
alignandum quaecumque rectitudinem
Bissecare Scaphulae differentia
recte levella inquit quadraturae
quod ut per se soluta in re per
radice aut ratione ex

A

On the Table Aexactly squar'd, as
you see here, fix the Paper, and
the Rule B, having a Crost stck
serves as a Squars, by the applica
tion of which stck to the Sides
of the Table, you draw by the
Rule what Parallel or Perp
culiar Lines you have anim
try.

B

P O Z Z O's

ARCHITECTURE

I N

PERSPECTIVE.

FIGURA PRIMA.

Explicatio linearum Plani & Horizontis, ac Punctorum
Oculi & Distantiae.



*T*he principia Perspectivae facilius intelligas, pono tibi ob oculos Templum, in cuius interiori facie, preter cetera, pingendum sit aliquid ad Perspectivam pertinens. Templi hujus vestigium geometricum est A, elevatio geometrica in longum est B, in latum est C. In A est locus Hominis aspicientis lineam D E, cui paries pingendum incumbit. In B idem Homo ex eadem distantiâ intuetur lineam F G, que refert elevationem parietis. In figura C supponimus Hominem confistere e regione ipsius parietis: easdemque proportiones mensuraram translatas esse ex vero parieti in figuram C, qua ipsius in parvo representantur.

Prima ergo linea H I dicitur linea terra vel plani, ex qua incipit, eidemque incumbit edificium. Secunda linea N O priori parallela, dicitur horizontalis, in qua ponitur O punctum oculi, & N punctum distantiae. Duo autem puncta distantiae à nobis posita sunt, ut unum adhibeas ex qua parte volueris; nam ad figuram optice contrahendas sufficit unum punctum distantiae: nec fieri potest alla optica delineatio, quin primo loco designetur duæ parallela, una plana seu terræ, altera horizontis, notando in linea horizontis, punctum oculi, seu opticum, & punctum distantiae. Porro unam etiamque rem tripli Schemate representare oportuit, ut videas, locum ex quo aspicienda est figura C, esse punctum N unius ex rectis N O, quam concipere debemus, velut normaliter infixam in O; ac distantiam inter O & N eandem esse debere cum distantia inter A & D E, inter B & G F.

In picturis multum spatii occupantibus, punctum oculi ponit solet in medio linea horizontalis: atque ubi altitudo pictura fit major latitudine, distantia N O fit aequalis altitudini. Si latitudo pictura fit major altitudine, distantia N O fit aequalis latitudini; ita enim unico intuitu totum pictum spatium comprehendendi poterit. Porro quanomodo eadem distantia diverso modo adhibetur in vestigio A, & in elevationibus B & C; nibilominus sectiones visualium cum pariete vestigii A, & elevationis B, omnino confibant cum sectionibus visualium figurae C.

Jam si velimus ut spectatori in A & B paries depeitus videatur distare à lineis D E & G F, quanta est longitudine quadrati P, cuius elevatio est Q; ex punctis A & B sunt visualis ad puncta extrema quadrati, notando sectiones visualium cum pariete D E & G F, qui ab aliis vocatur velum, vitrum diaphanum, sectio, tela, vel tabula. Inventes autem, lineas RS ac TV esse aequales, ac similiter lineas XZ & YK; & sic de aliis.

The First Figure.

Explication of the Lines of the Plan and Horizon, and of the Points of the Eye and of the Distance.



HAT you may the better understand the Principles of Perspective, here is presented to your View a Temple, on the inner Wall of which, amongst other things, one would paint something in Perspective. The Geometrical Plan of this Church is A, the Geometrical Elevation, or Upright, lengthwise is B, breadthwise is C. In A is the Place from whence a Man beholds the Line D E, which is the Plan of the Wall that is to be painted: In B the same Man, from the same Distance, looks upon the Line F G, that represents the Elevation of the Wall. In Fig. C, the Man is supposed to stand opposite to the said Wall; and this Figure contains, in Little, the very same Proportions of Measures transferr'd from the real Wall.

The first Line therefore H I is call'd the Ground-line, or Line of the Plan, at which the Edifice begins, and on which it stands. The second Line N O N, parallel to the former, is call'd the Horizontal Line, wherein is plac'd O the Point of the Eye, and Two Points of Distance are here laid down, that you may make use of which you please; for that on one Side only is sufficient for the fore-shortning Figures in Perspective: Neither can any Optick Delineation, or Perspective, be described, without first making two Parallels; one of the Plan, or Ground-line, the other of the Horizon; marking, in the Line of the Horizon, the Point of the Eye, or Sight, and the Point of Distance.

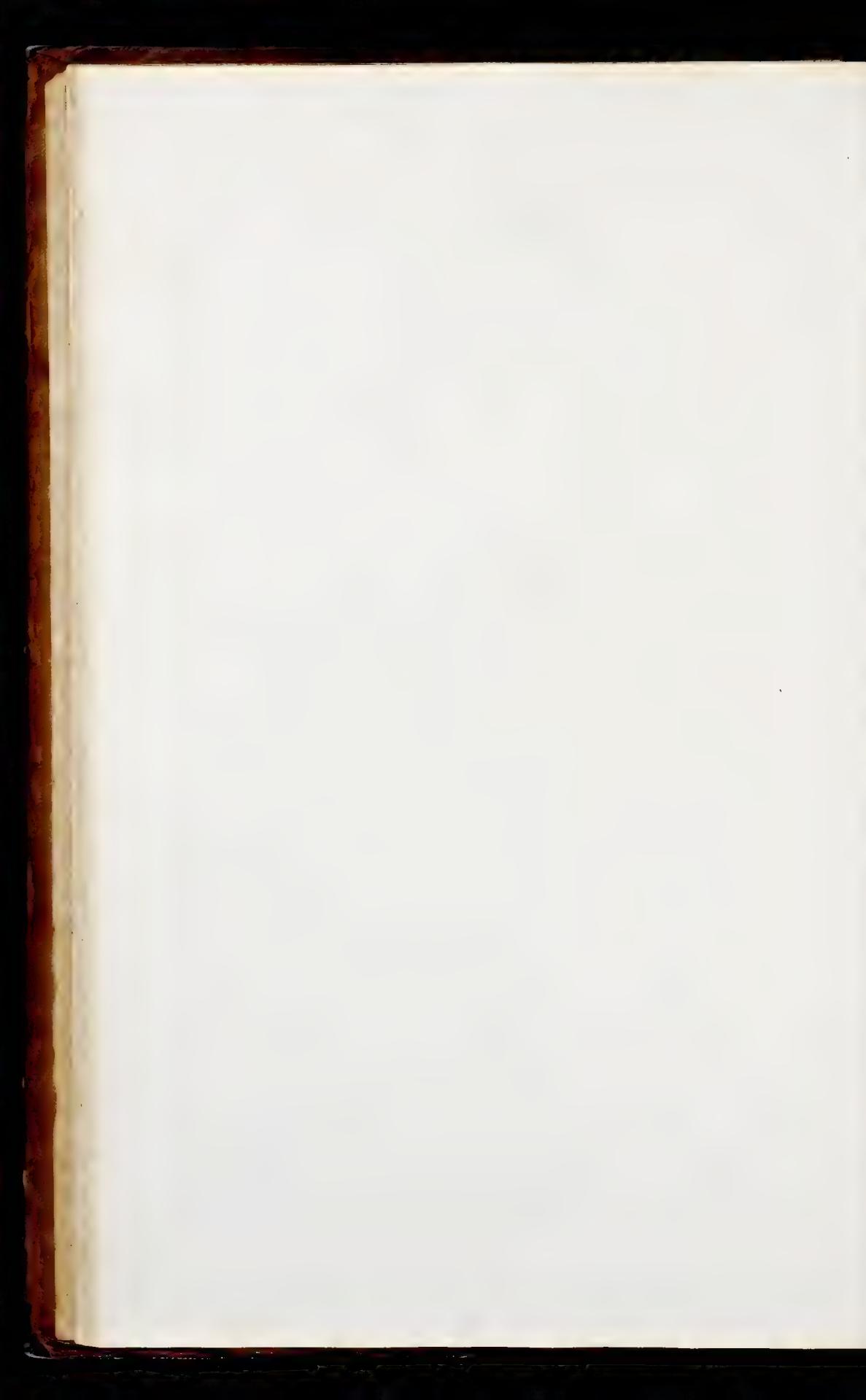
It was thought besides expedient to put one and the same Thing into three Schemes or Designs, to let you see, that the Place, from which the Figure C is to be look'd upon, is the Point N, one of the right Lines N O, which must be conceived as fixt at right Angles into O; the Distance N O being the same as that between A and D E in the Plan, or between B and G F in the Upright.

In Pictures taking up a great deal of Room, the Point of Sight ought to be made in the middle of the Horizontal Line; and where the Height of the Picture happens to be greater than the Breadth, the Distance N O must be made equal to the Height. If the Breadth of the Picture exceed the Height, the Distance N O must be made equal to the Breadth: For so will the Extent of the Picture be the better comprehended, or receiv'd, at one View. And altho' the same Distance may seem to be used in a different manner in the Plan A, and in the Elevation B, from what it is in C; nevertheless the Sections of the visual Rays, with the Wall of the Plan A, and of the Elevation B, have a perfect Correspondence with the Sections of those of the Figure C.

Now, if to the Spectator in A and B, we would have the farthest Part of the Work seem to recede from the Lines D E and G F, as much as the Square P does, whose Elevation is Q; draw from the Points A and B, the visual Rays to the extreme Points of the Square P and Q; noting the Sections they make with the Walls D E and G F; which by some is call'd the Veil, Transparent Medium, Section, Cloth, or Table: and you'll find R S equal to T V, X Z equal to Y K; and so of the rest.

FIG. I.





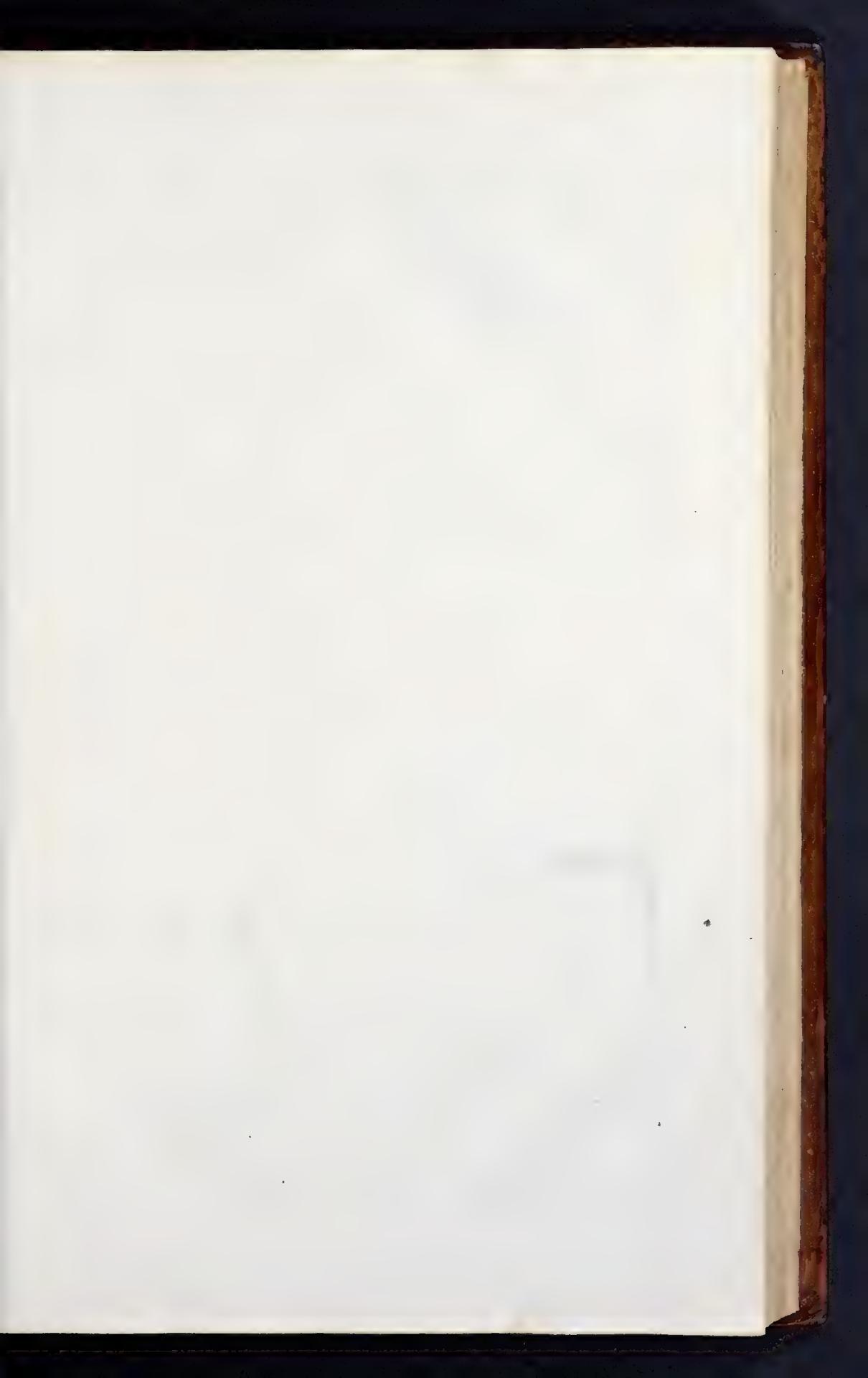


FIG. II.

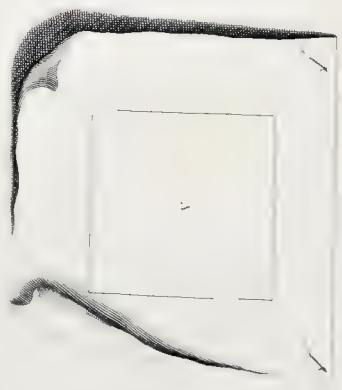
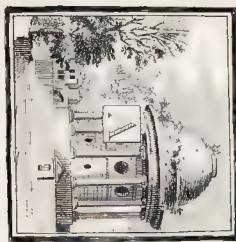


FIGURA Secunda.

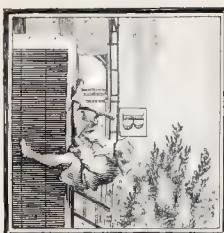
Modus delineandi opticè Quadratum.

Manner of delineating a Square in Perspective.



NTE descriptionem optican quadrati A, quod fingimus delictum esse in popyo separata, ducenta sunt due linea parallela; altera plan, altera horizontis, ne iam docimus; noscendo in linea horizontis punctum oculi O, & punctum distantie E. Tum translatâ in lineam plani latitudine ac longitudine ipsius quadrati A, ita ut linea C B sit aequalis latitudini, & DC sit aequalis longitudini. Ex punctis B & C fuit vijades BO, CO ad punctum oculi, ex puncto D sit recta DE ad punctum distantie. Denun nes visionem CO fecit recta DE, sit GF parallela ad CB, bachelque quadratum optice contractionem.

Compendium temporis & laboris facies, preferim in schematibus que abundant lineis, se chartulam in medio complicaveris, eademque utaris, ut latitudinem ac longitudinem quadrati transferas in lineam plani.



BEFORE the Square A, which is supposed to be drawn on a separate Paper, can be laid down in Perspective, two Parallel Lines must be drawn; one of the Plan, the other of the Horizon, as is already intimated; noting in the Horizontal Line the Point of Sight O, and the Point of Distance E. Then, when the Length and Breadth of the Square A shall be transfer'd into the Line of the Plan, so that the Line CB be equal to the Breadth, and DC be equal to the Length. Let the visual Lines BO, CO be drawn from the Points B and C to the Point of Sight O, and the right Line DE from the Point D to the Point of Distance. Lastly, where the Line DE cuts the Visual CO, make GF parallel to CB: and you have the Square Optically contracted, or fore-shorten'd in Perspective.

To spare Time and Pains, especially in Figures that abound in Lines, fold your Paper in the middle, and make use of it to transfer the Breadth and Length of the Square, into the Line of the Plan.

FIGURA TERTIA.

Optica delineatio rectanguli, alterâ
parte longioris.

The Third Figure.

*The Delineation of an Oblong Square in
Perspective.*

Altitudo BC rectanguli A po-
natur in linea plani, adhibito
circino, vel chartula complica-
tâ; & ex punctis B & C fiant
visuales ad O, punctum per-
speciva. Tum papyro ex al-
tera parte iterum complicatâ, notetur longitudo
CD rectanguli; ducento tum redam DE ad
punctum diffantie, tum redam FG parallelam
ad BC, que complebit opticam delineationem
rectanguli.



ET the Breadth BC of the Square A, be plac'd in the Line of the Plan, by the Compas, or a folded Paper, and from the Points B and C, make the Visuals to the Point of Sight O. Then fold your Paper cross-wise, and mark CD the Length of the Square, drawing the Line DE to the Point of Distance, and the Line FG parallel to BC, which will complete the Optick Delineation of the oblong Square.

The other Figure shews the Folding of the Paper cross-wise, which is of ready use in delineating Squares, whose Breadth exceeds their Length, or vice versa; or whose Length and Breadth are equal.

Alterâ figura ostendit complicationem cruci-
formem papyri, que adhiberi potest in delinean-
dis rectangulis, seu latitudo eorum sit major lon-
gitudine, aut vice versu; seu latitudo & longitu-
do sint aequales.

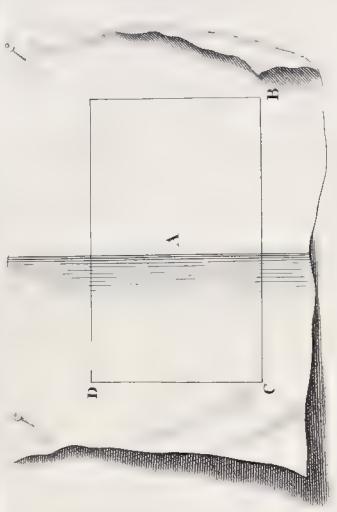
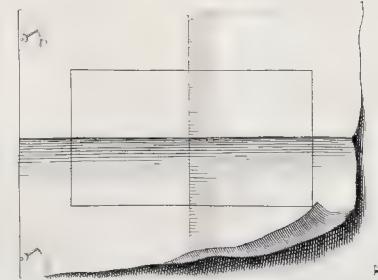
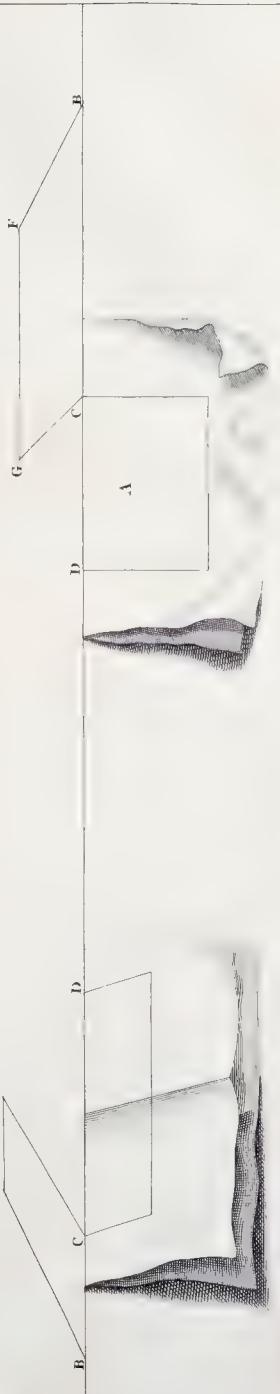


FIG. III

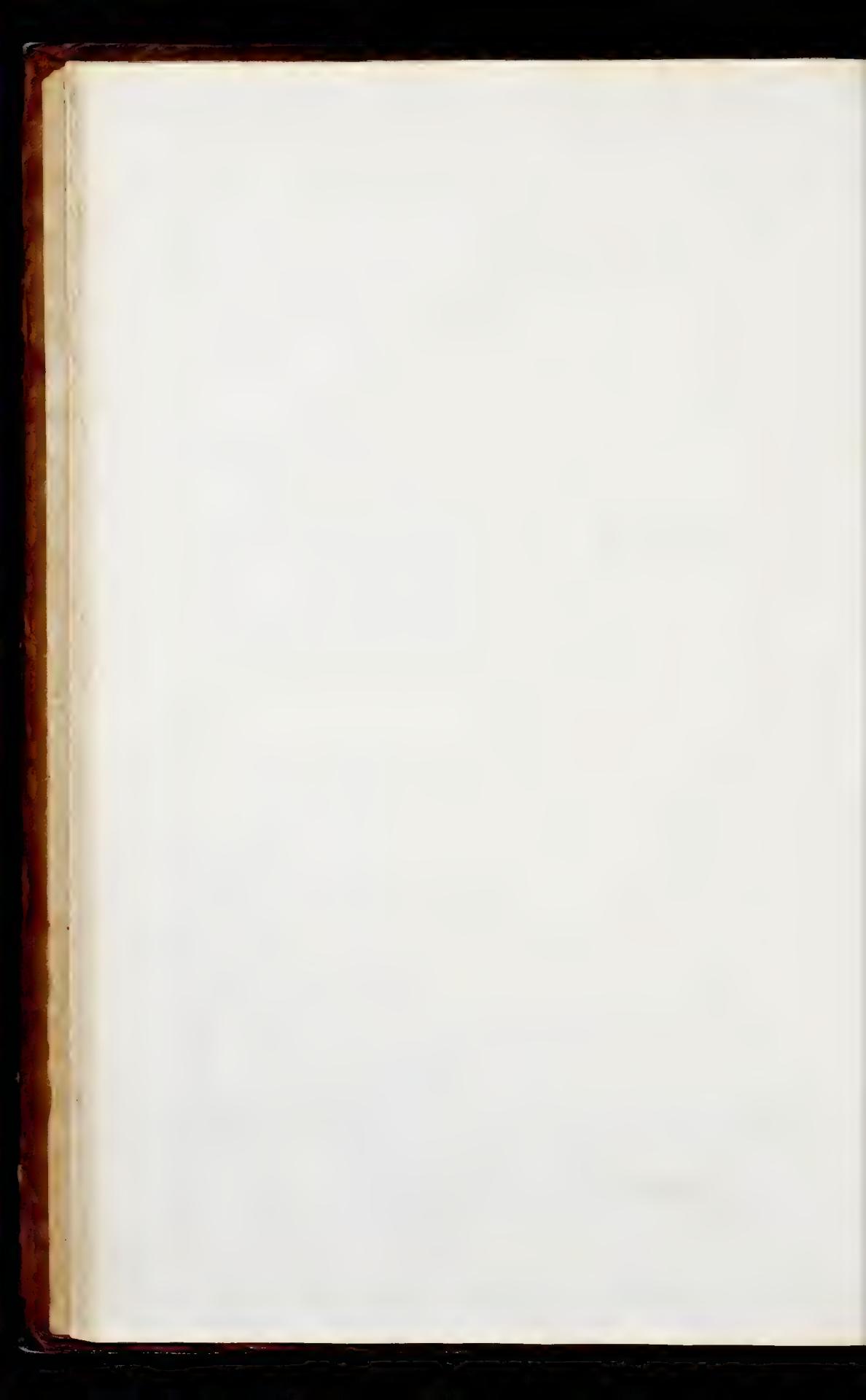
E
D
C
B
A
F
G
O

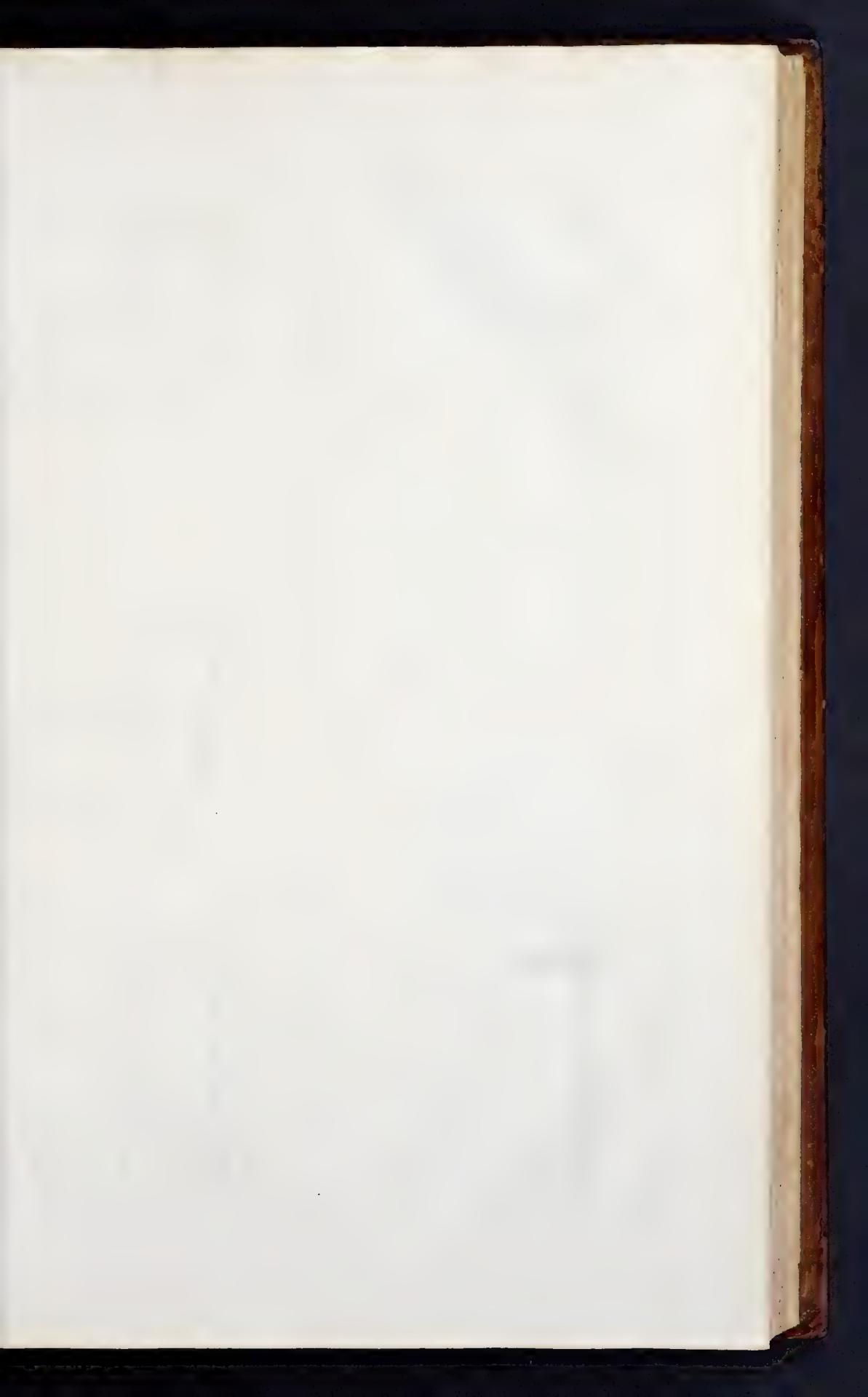


E
D
C
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E
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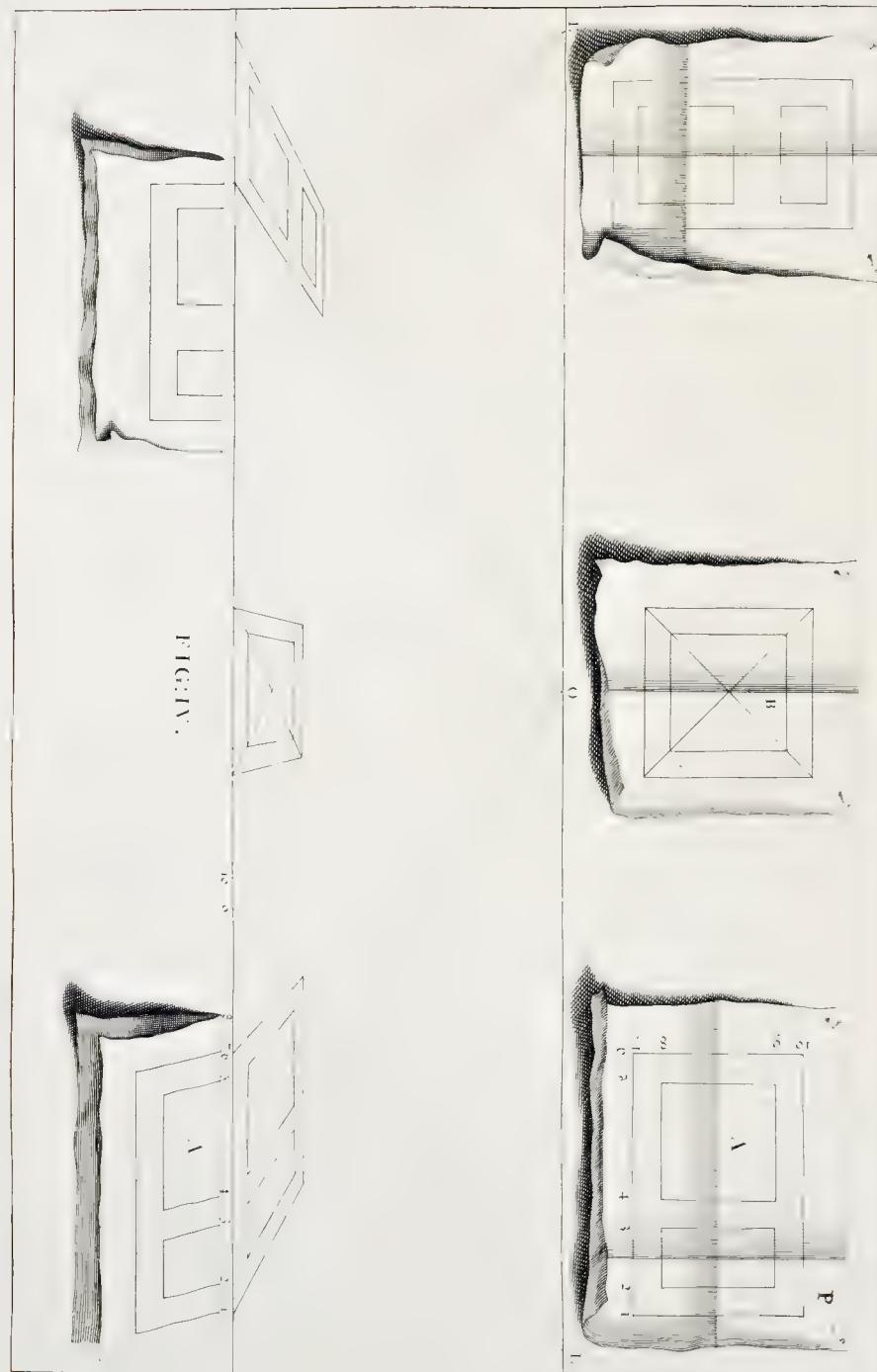


FIGURA QUINTA.

Optica descriptio quadrati duplicitis.



Allincipit, ut compendio papyri complicate. Nam eam adveniendo linea plani, nullo negotio notare poteris punctum I, 2, 3, 4, 5, 6, linearum visualium, quae ducentur ad Opuntum perspectivæ. Exinde complicata rursum charioli in crucem ad P, notabuntur hec puncta; 7, coincidens cum punto 6, nisi quadratum diffet à linea plani; 8, 9, 10. Ductis autem rectis ex 8, 9, 10, ad punctum E, ubi sequant visualem 6, 7, fent parallele, eritque completea delineatio.

In medio quadrati B, aliud quadratum facile describetur, ducento diagonales seu diametros ab angulo ad angulum, ut in figura.

The Fourth Figure.

The Optical Delineation of a double Square.

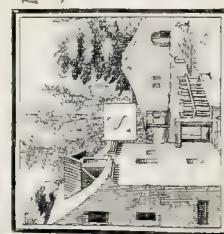


HERE you'll find the Advantage of your folded Paper; for applying it to the Line of the Plan, you readily mark the Points 1, 2, 3, 4, 5, 6, of the visual Lines, which must be drawn to the Point of Sight O. Then folding the Paper crosswise, as in P, you mark the Points 7, 8, 9, 10, placing the Point 7 on that of 6, unless you would have the Square removed within the Line of the Plan. Then from 8, 9, 10, drawing Lines to the Point of Distance E; where they intersect the Line 6, 7, O, draw Parallels to the Line of the Plan; and your Work is done.

Within the Square B, you may easily inscribe another Square, by help of the Diagonals; as may be seen in the Figure.

FIGURA QUINTA.

Vestigia quadratorum, cum elevationibus.



*Ita positis in qua iam diximus de contraria-
one operis Quadratorum, mandatum est, neque
per una Quadratum diffare a linea plani ratio BA o-
pere continetur; quia linea BD habet à rebus
AO, distantiam BA. Proponit modo Quadratum
hac, acutam differt a linea, sicut ipso E A, & pro-
met.*

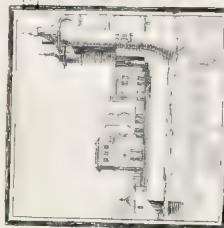
*Vestigia quadratorum, tunc ad latitudinem, et
longitudinem, &c. parcer reficiuntur, tunc
in primis levigantur, in aliis tunc BD, CD, rebus
tunc ad punctum diffinuntur, sicut vixit in AO.*

*Sub singulis vestigioribus Quadratorum, delineantur aliis omnino funditus, per que-
paro labore fiant tunc hys, ergendo ad latitudinem duas primas perpendicularia quo-
quates; ac discendo tam duas rectas vixiles ad punctum eundem O, non rotundas, ut in
figura. Supponendum est autem, geometricam altitudinem capillaret recte definiat ex
lineis normalibus ad lineam planam, quemadmodum latitudo & longitudine geometræ
ad amittitur ex eadem linea plana.*

*Tres aliæ hys inferiores formantur, sicut lineis octauis ex vestigio & ex eleva-
tione longitudinali optime difformes, aliquid brevius, aliquid longius, at latitudines mo-
deriorum. Nonne attendamus inter longissimas distinationes quadraturarum, atque aliæ lati-
tudines latitudinis utrueq[ue] magis & non aliæ latitudines nonnullæ ad ha-
mem plures, thanquod hec normae eadem habent proportionem ipsius latitudinis, &
reflexum refectoriorum & elevacionis. Quæ latitudinem autem, per conformatum alter-
ius F G, & latitudinis H I, opere datur, in se, invenit, ne percedat, ut
nulla basi, ita amittatur certitudo in ei, tunc in et ceteris.*

The Fifth Figure.

Plans of Squares, with their Elevations.

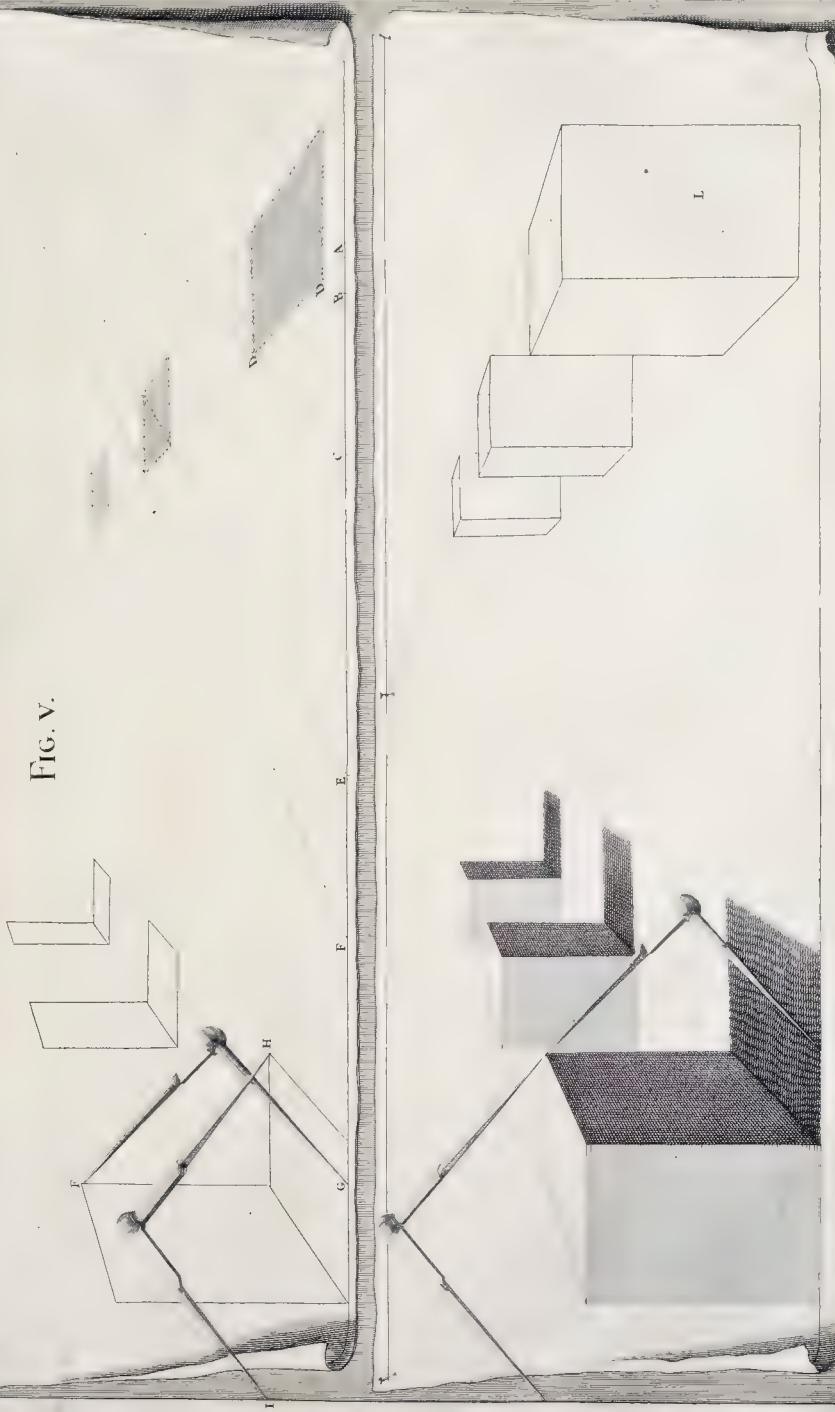


ESIDES what has been already laid of the fore-shortning of Squares in Perspective, it is convenient to observe, that the Root of the half Square is here set within the Line of the Plan, as much as the Space BA optically contracted; because the Line BD has the Distance 3 A from the Virtual AO. And in like manner, the second Square is distant from the Line of the Plan the Space 1 A; and so for the rest. I would have you observe in all these Squares, That by the Length I al-
ways understand part of the virtual Lines, and by the Breadth those parallel to the Ground-Line; which in the first Square are drawn from the Points in which the Lines BD, CD, tending to the Point of Distance, intersect the Virtual AO.

Under the Plans of these Squares are described three others just like them, which are easily converted into three Bales, by erecting, at pleasure, the two first Perpendiculars of equal Height, and thence drawing two Verticals to the Point of Sight O, which also bounds the rest, as in the Figure. Observe also, That the Geometrical Height of every thing is to be set per-
pendicularly from the Ground-line, or Line of the plan, & the Geometri-
cal Length and Breadth are also placed on the same Line.

The three other Bales below are formed without the Help of Oculi: Lines, by making use only of the Heights and Breadths of the Angles, & from the Perspective Plan and Upright. By Height I understand the Distance of each Angle, or Corner, from the Ground-Line; By Breadth, the Distance of an Angle, or Corner, from any Line perpendiculare to this Ground-Line; provided these Lines have always the same place in respect of the Bales, as they have in respect of the Perspective Plan, and Upright. And as, by the Help of two Compasses, the Height in O, and the breadth HI determine the Corner of the first Bale; so in like manner, are found the Corners of the other Bales.

FIG. V.





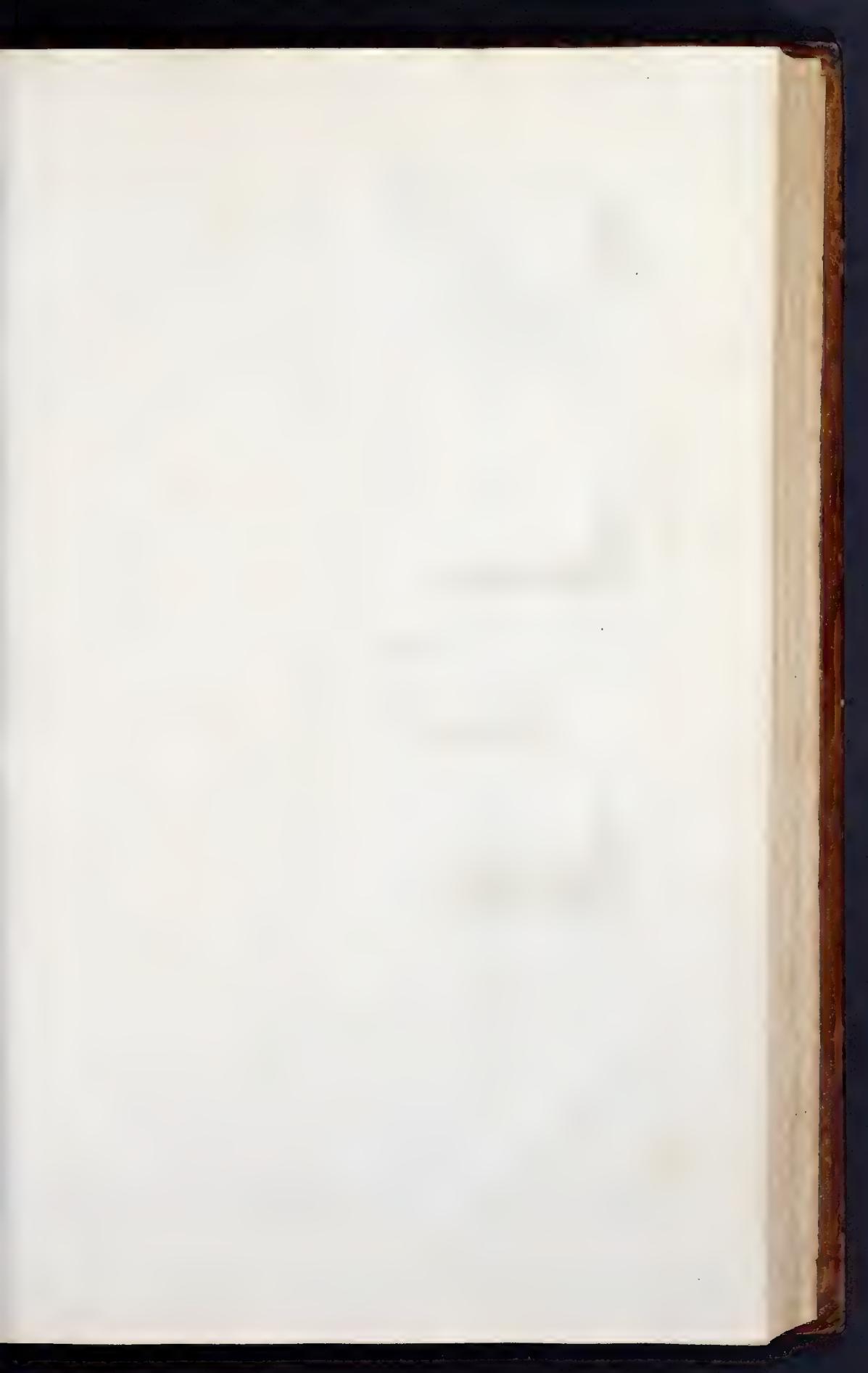


FIG. VI

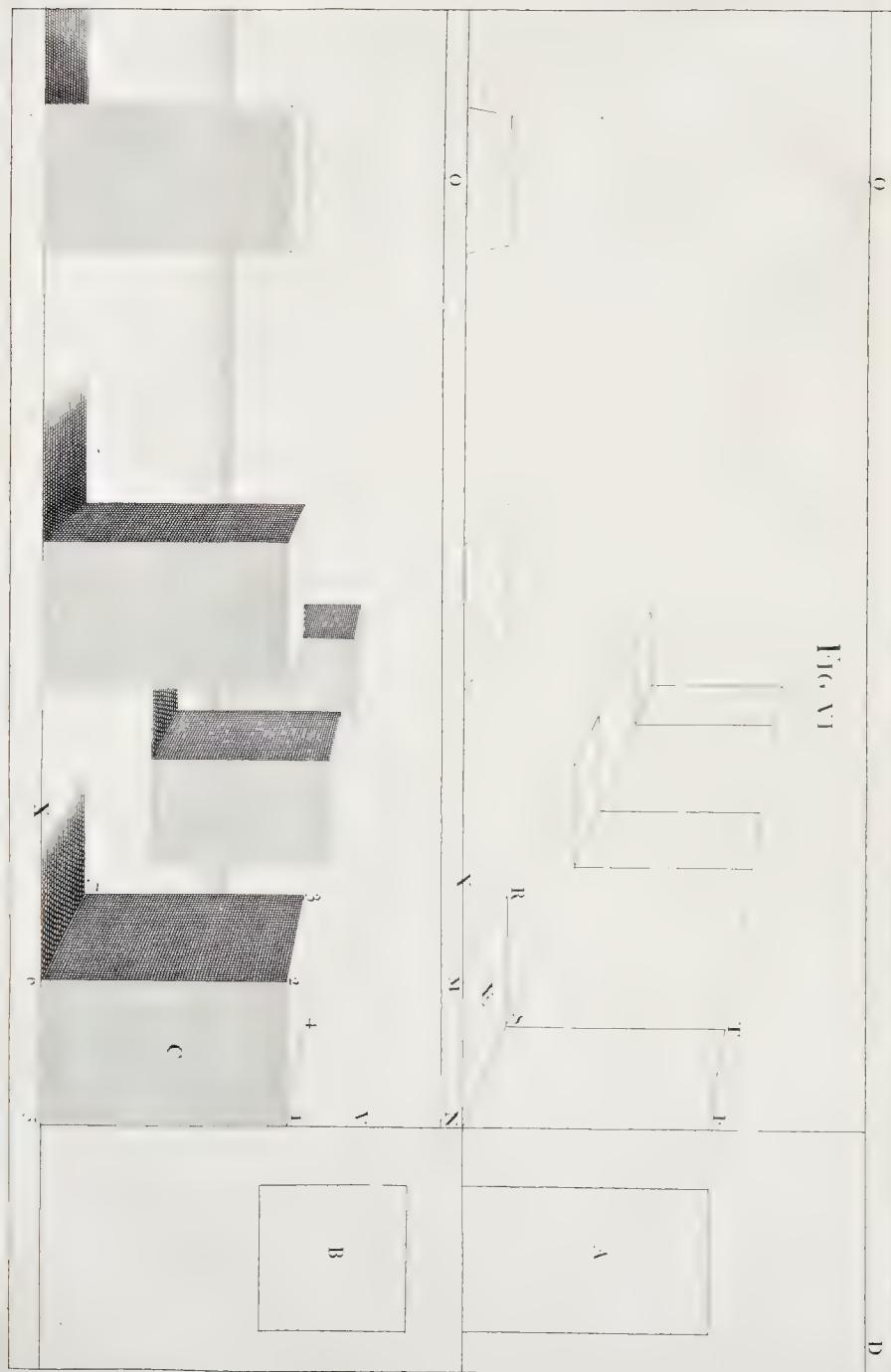


FIGURA SEXTA.

The Sixth Figure.

Modus opticae delineationis, absque
lineis occultis.

*The Manner of designing in Perspective, without
occult Lines.*



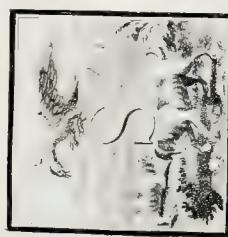
N hac figura sexta, reflegium geometricum B, se-
cundum posuit ab elevatione geometrica A, ut dein-
cups faceremus. Vt figuram B optice contrahatur in
E, est N M R S; elevatio contracta longitudinis
reflegii est F T S N. Positio suorum quod altitu-
dines F N, 1, 5, 2, 6, sunt aequalis; latitudines
N M, 1, 2, 5, 6, sunt aequalis, & recte N M,
5, 6, sunt in linea X plani; recte F N, 1, 5,
int in perpendiculari V: anguli 3 & 4 bisifs C habent eundem elevati-
onem, quam plani, quam habet angulus T: anguli 1 & 2 habent ele-
vationem, quam angulus F: anguli 3 & 7 habent eundem latitudinem seu di-
stantiam, quam habet angulus R: anguli 2 & 6 habent eun-
dem latitudinem, quam habet angulus M.



N this sixth Figure, I have design'd the Geome-
trical Plan B (separately from the Geometrical
Elevation A, as I shall always do hereafter.
The Plan B optically contracted, or put in
Perspective, in E, is N M R S; the Elevation
of its Length in Perspective is F T S N. Then
supposing the Heights F N, 1, 5, 2, 6, equal;
and the Breadths N M, 1, 2, 5, 6, equal; the
Lines N M, 5, 6, to be in the Line of the Plan X; and the Lines F N,
1, 5, in the Perpendicular V: the Angles 3 and 4 of the Base C have the
very same Elevation or Distance from the Line of the Plan X, as has the
Angle T: the Angles 1 and 2 have the same Elevation with the Angle F:
the Angles 3 and 7 have the same Breadth or Distance from the Perpen-
dicular V, as the Angle R has: the Angles 2 and 6 have the same
Breadth, as the Angle M has.

FIGURA SEPTIMA.

Aliud exemplum vestrum geometricum
cum elevatione longitudinis.



*I*dividit in tres difficit: in planis ruris
sit in figura A cum his divisionibus et statu-
m I. D & latitudus C.D. *F*igura vero ex-
vicias latitudus habet in I.F. elevata, B que
portuna sita ad X. Porro ad contractuum o-
pticanum reficitur abiebatur papyrus confitans in la-
tum C in longam, transforans in lucam plani hi-
titudinem & longitudinali m defigu. Divide nullo
negato fieri optica deformatio elevatus, ut clavis papyrus est in figura. Quis-
modi autem ex refectorio & ex divisione longitudinali optice immensis crastin-
atis initia fine linea acclivis, ex precedentibus manifestum est. Optimum ut
per officium circin traditionem in hac methodo exercitari operam facilis ponat;
quoniam ex ea pendat omnis facilitas delineationum operarum.

The Seventh Figure.

*An other Example of a Geometrical Plan and
Elevation, with its Perspective.*



Copy drawing in perspective A a Pedestal, or Base,
divided into four parts, make to Plan A with
its Divisions of Length B D, and of Breadth
C D; and the same Divisions of Breadth F G
in the Elevation B, prolonged to A. Then
make the Perspective-plan, by transferring the
Breadth and Length into the Ground-plan, by
means of your Paper folded cross-wise. From
which Plan the Perspective-Upright is very easily made, as may be plainly
seen in the Figure. How the Base below, without occult Lines, is
made from the Perspective-Plan and Upright, is manifest from what has
been said before. I could wish you would be very diligent in the Pra-
etice of this Method by the Comps; because the Dispatch of Perpe-
tive-Delineations chiefly depends thereon.

FIG. VII.

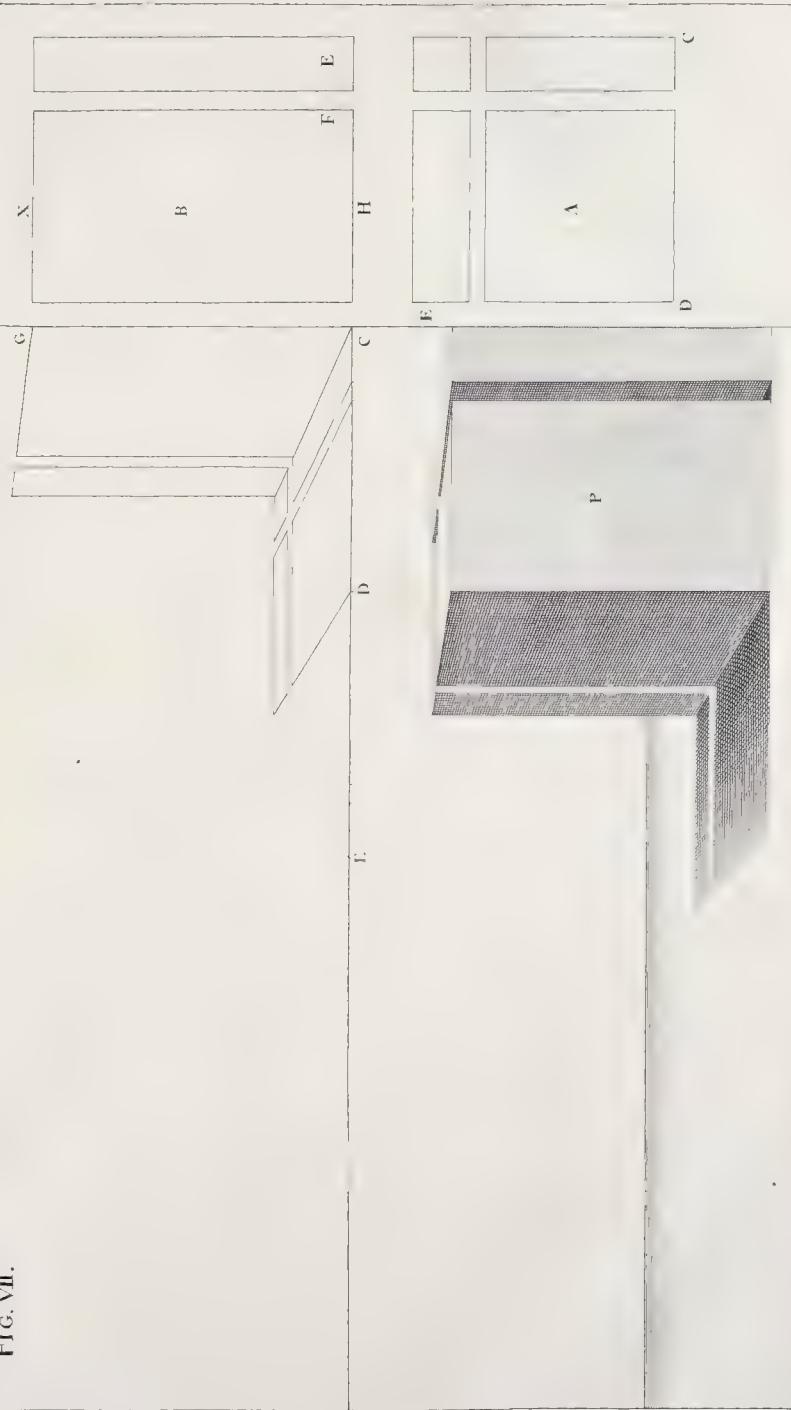






FIG. S.

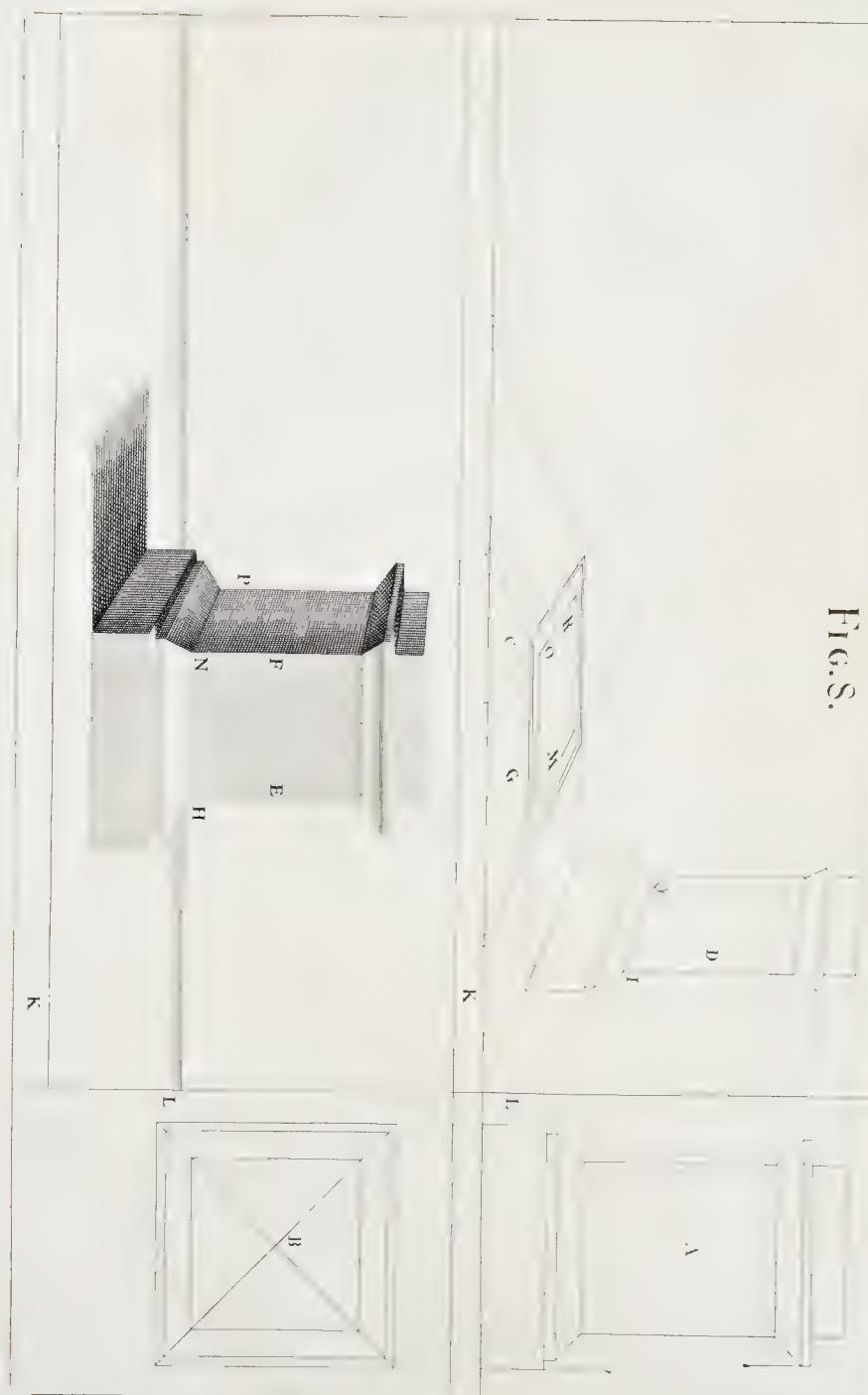
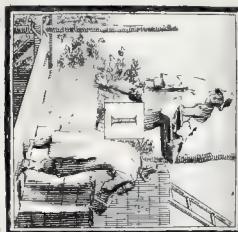


FIGURA OCTAVA.

Optica projectio stylobattæ.



I libition facit delineare stylobatam, eum proiec-
tus in somno & imo, incipie ab elevatione ge-
ometrica A, discendo ocellas ad id necessarium, tum
versus perpendiculararem L, tunc deorsum proje-
ctio geometrico B, cuius distantie transponitur in
stylobatum G. Si maijore longitudine differt styl-
o C a maioris latitudinis, refugium deforma-
tum videbatur distare à linea K plani, quantum ef-
ficiunt stylatum C. In confruenda optica elevatio D, vidules ex punctis li-
nea L dabant lineas latitudinis; lineas vero altitudinis acicies ex lineis vidu-
læ contracti, ut in figura. In formando stylobata nitido E F, locum anguli
H dabit concavus latitudinis ex linea L usque ad M, & altitudinis ex li-
nea K usque ad I. Concavitas tunc cylindram altitudinis ex L
usque ad O, dabit angulum N. Demum altitudinem anguli P acicies ex K
usque ad Q; latitudinem ex L usque ad R.



The Eighth Figure. *The Projection of a Pedestal in Perspective.*

If you would draw a Pedestal, with the Projec-
tion of its Cap and Base, you must begin
with the Geometrical Elevation A, by drawing
such occult Lines as are necessary, as well side-
ways to the Perpendicular L, as downwards
for making the Geometrical Plan B, whose Di-
stances must be transferri'd, and carry'd into the
Space G. If the Measures of the Length be
placed the Distance of the Space G, from thosc
of the Breadth, the Perspective-Plan will then appear remov'd within the
Groundline K, as much as the said Space C is. In the Construction of
the Perspective Elevation D, the Vitudines drawn from the Points of the
Line L give the Lines of the Breadth, and thos of the Height are taken
from the Lines of the Perspective-Plan, as in the Figure. In delineating
the clean or finish'd Pedestal E F, the Interfection of the Breadth from L
to M, with the Height from K to I, gives the precise Place of the Cor-
ner H. The Interfection of the same Height with the Breadth L O gives
the Angle N. Lastly, the Angle P is found by the Interfection of the
Height K Q, with that of the Breadth L R.

FIGURA NONA.

*Ostetrica delinatio Architecturae Jacobi Barozzii; & primum, de Stylo-
bata Ordinis Iustiniani.*

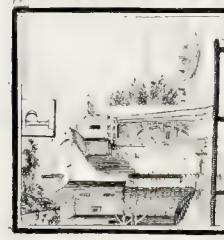


defigium nos addens; ex religio autem & ex ubatione opere defensio, dicentibus apparentias foliorum plantarum trahunt. Exempli gratia, si dominum invenire velis religiosum quadratum & planum ordinis Fratrum, precice (v. ratione) geometricam A. dicentes oportet religionem communiam B. ex antibus eorum optineantur, commixti fronte foliolata nubila D. cum autem & pila exponit ad latos, accipiendo alitudines à loco plani, latitudines à linea perpendiculari ad ipsam planum. In aliis definitionibus planum ex alibi quo, ut ex omni modo determinans afficitur.

*Ad ventum confusum latentes, prodat ut fratre fratris hys nolitis
multis & indolis : ut quem suam regis posse cospicua est loca mala-
latentem. Haec nomina diligenter pars apud, in quis dividitur linea
latitudinis & altitudinis circumferentia sive circuus : ut latus lati-
tudinis & longitudo circumferentiae. Si vultus fratris horum, haec linea
fingitur in quadrato primo & ad eum suum simulum, latitudinem ne-
trigintam, reflexigintur, et continentur. Medicus Irenicus Dori-
cuncius in datus duodecim : refutatio eius in octo decim partium sunt.*

The Ninth Figure.

The Architecture of Vignola in Part I, Figures 3, and first, of his *Pratica* of the Tuscan Order.



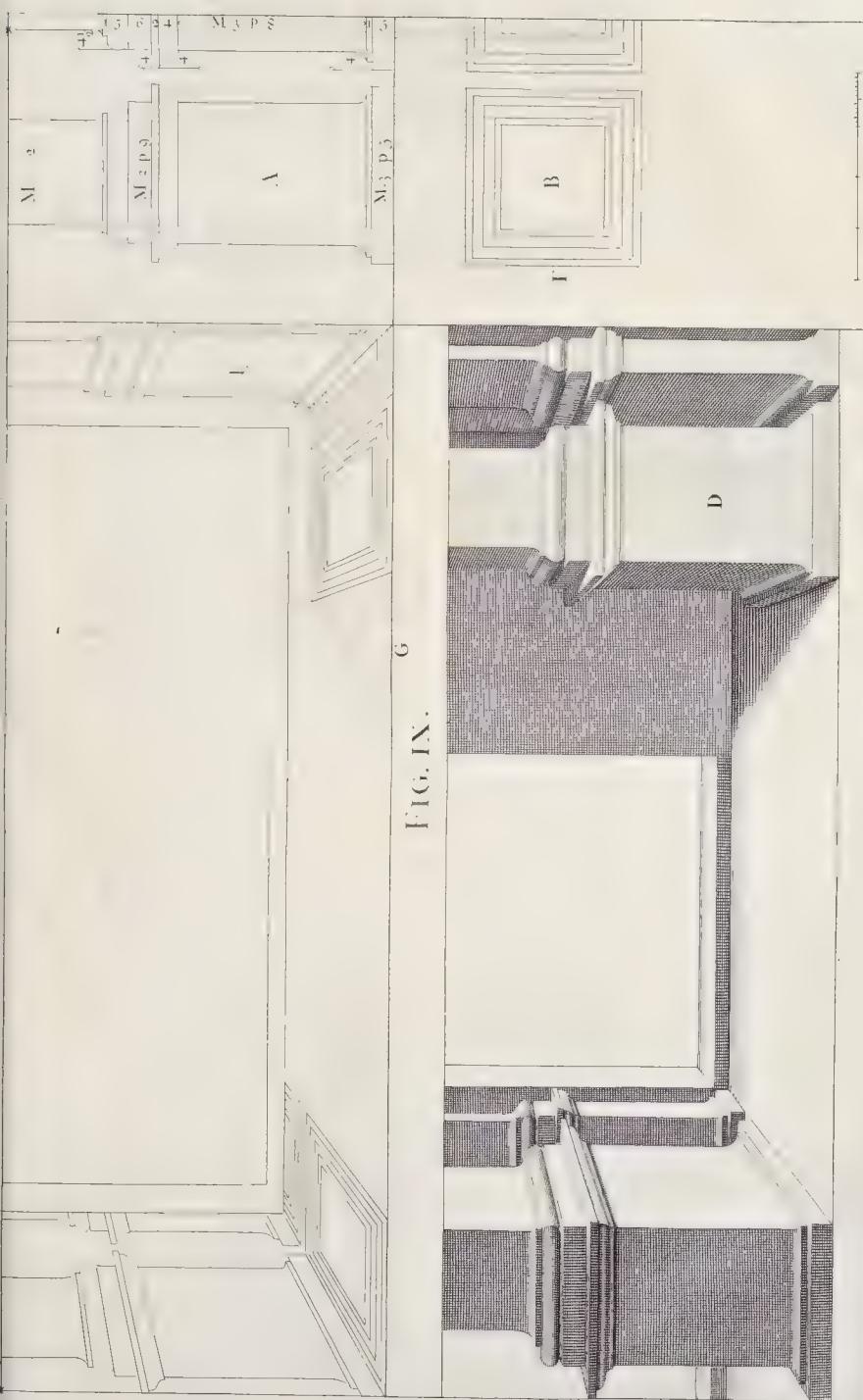






FIG. 10.

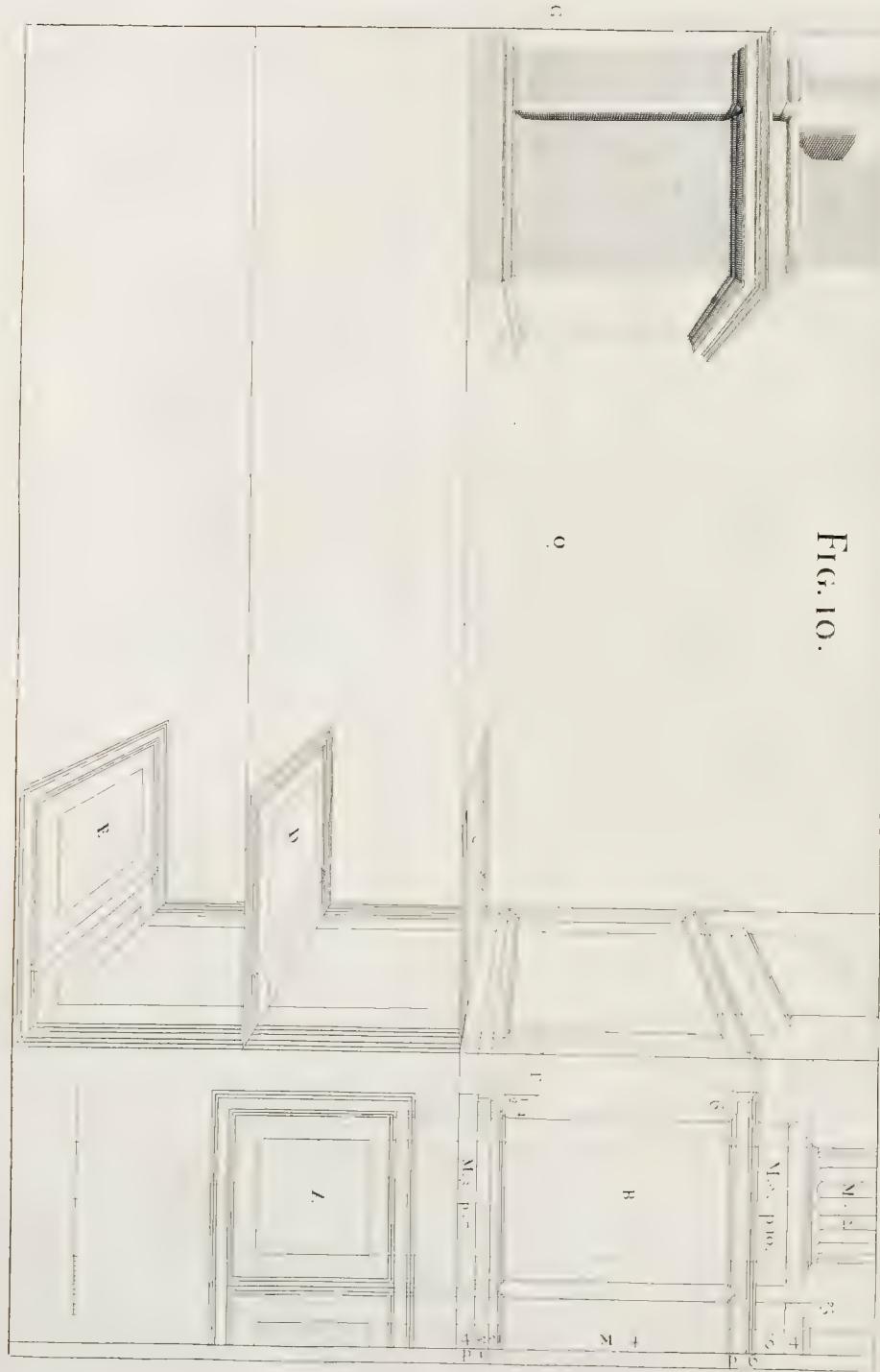
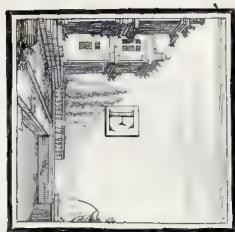


FIGURA DECIMA.

The Tenth Figure.

Optica deformatio à stylata Doriæ ; ubi de modo vitandi confusione, in veltigns delineandis.



L'ETATIO somatica B stylata Doræ continet unum dominicum partium que habetur aequaliter Bioculum ; ex eaque oritur refugium coniunctione A per lineas oculatas, que dependent ex punctis terminatis præcipuum projectarum. Eundem projectarum distantie transversa sunt in linea elevationis, notando puncta que necessaria sunt ad deformandum elevationem longitudinis stylatae.



HE Geometrical Elevation B has the same Members and Proportions, as the Dorick Pedestal of Stylæ ; and the Geometrical Plan A is formed, by letting fall occult Lines from the principal Projectures of the Upright. Occult Lines are also to be continued to the Pedestal F, from the several Members requisite for elevating in Perspective the Length of the Pedestal.

Si ob proximatenam lineæ plani ad lineam horizontis, refugium evulat coniunctione, fuit in distantia congrua sub linea plani, dñe linea planorum ipi parallela, cum sis refugia. Quid autem emolumenti affavit distantia major præ minori, offendit refugium E distinctus refugio D. Singula hac refugia sunt notanda in linea cuique plani mensura latitudinis & longitudinis refugii A, & duocundo lineas ad eadem puncta oculi ac distante.

Stylobatum nitidum descriptum ex parte G, tum ex necessitate, tum ut videtur, pro diffantiæ FO, nufundam eß definitionem GO penitus expalem.

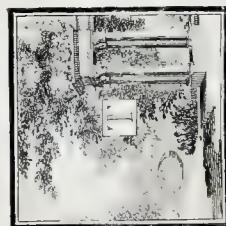
When, by reason of the too near Approach of the Ground-line to that of the Horizon, the Plan becomes thereby confus'd ; draw at a convenient Distance underneath, other Ground-lines parallel to the first ; together with the Plans in Perspective. And of what Advantage the Removal of the Ground-line is, is evident from the Plan E, which is much more distinct than the Plan D. Each of these Plans is made, by marking upon its respective Ground-line the Measures of the Breadth and Length of the Plan A, and by drawing Lines to the same Points of Sight and Distance, which were first assign'd.

We have placed the finisht Pedestal on the Side G, partly for want of Room, and partly to shew, that the Point of Distance G is there made use of, GO being equal to FO.

FIGURA Undecima.

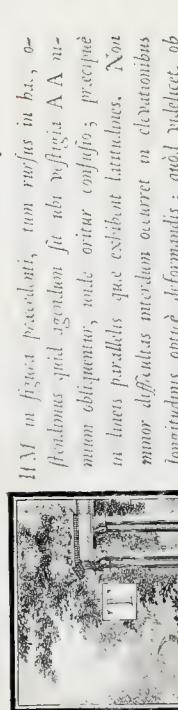
Sedulius Intra dictiorio; ubi de vitanda confusione
in elevationibus.

*Hoc in primo procedenti, non rufus in hu-
mido, sed agendum sit ubi refugia A A nu-
mum obliquantur, unde oritur confusio; preceps
in linea parallela que exhibent latitudines. Non
minor difficultas interdum occurreret in elevacionibus
longitudinis opique deformandis; quod videlicet, ob-
num tam cymat, obliquitatem, pyramidam non fit attin-
dentes singularium projectiarum probe differere ac
designare. Ad scropulos iros declinando, loco elevations B aliquidetur exposito C,
que distinctior est, tum illa, tum datus numerulus D & E, ob maiorem di-
stantiam quam habet a puncto scudi.*



The Eventh Figure.

Hoc in secundo Trigonal in Perspectiva; unde h[ic] Maner of Moulding in Figura,



*S in the foregoing Figure, so in this, also is
shown what is to be done, where the Plans AA
have to oblique, as to castle Confiture; especially
in the Parallel-lines which give the Breadths.
The like Inconvenience often happens in ele-
vating the Lengths in Perspective; when how-
ever their too near Approach to the Point of Sight,
the Contour of the several Mouldings, can't be
distinctly delineated: For according wh[ich], instead of B you may make
use of the Elevation C, which is not only more distinct than the former,
but better than either of the two intermediate ones D or E, by so much
as it is more remote from the Point of Sight.*

*In deligning the finished Pedestal, the Breadths are taken from the low-
est Plan, by letting one Point of the Compasses in the perpendicular
Line OL: the Heights are taken from the Elevation C, by placing one
Point of the Compasses in the Ground-line, as has been shewn before.*

*In delineando planata mutho, latitudines accipientar ex ultimo refugio, ponendo
runt cuiuscumdem circu[m] in linea perpendiculari, que proxima est littere O, altitudines
accipientar ex elevacione C, ponendo unam cuiuscumdem circu[m] in linea plani, ut in
praecedentibus operis h[ic] est.*

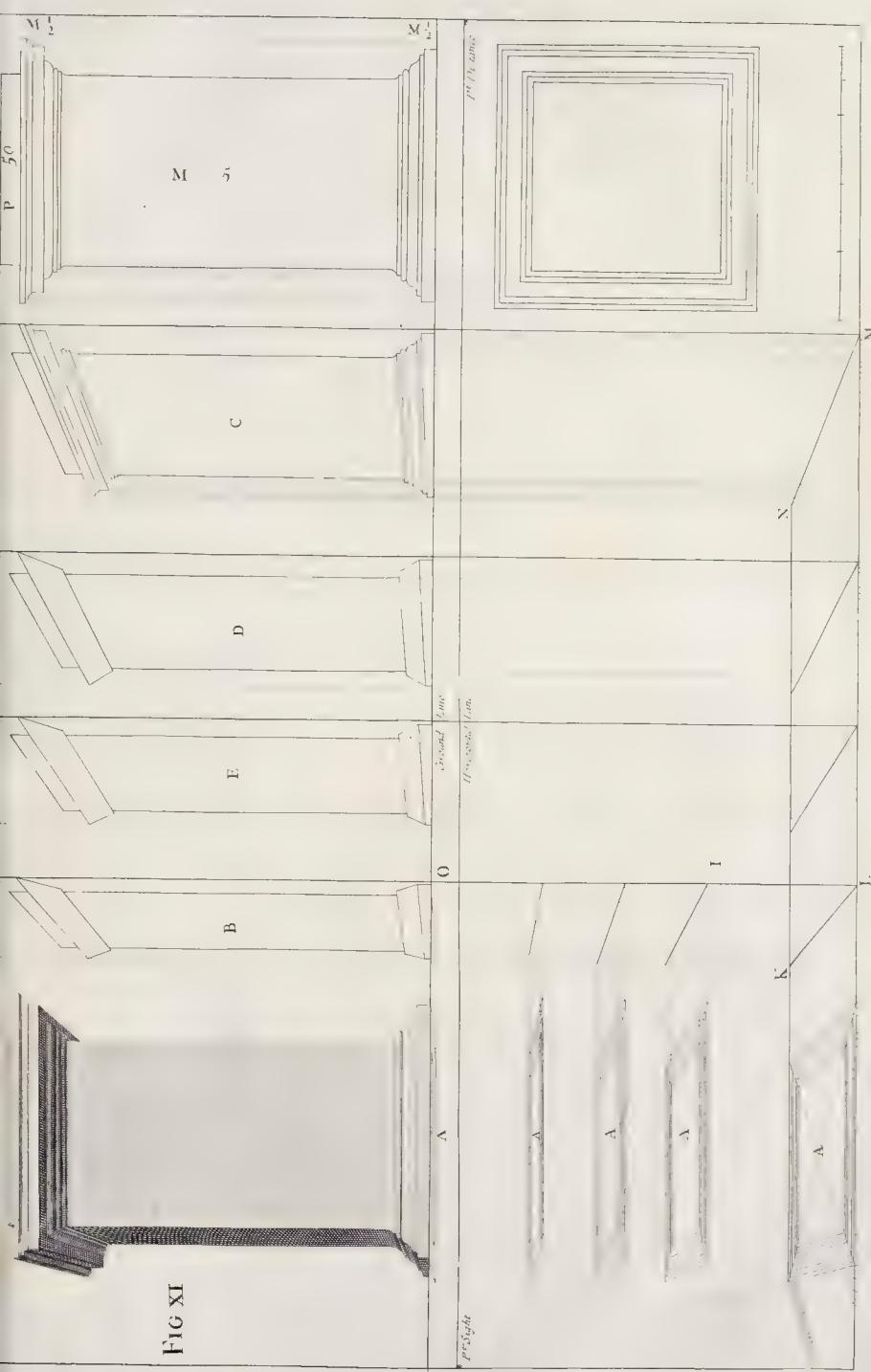


FIG XI





FIG. XI.

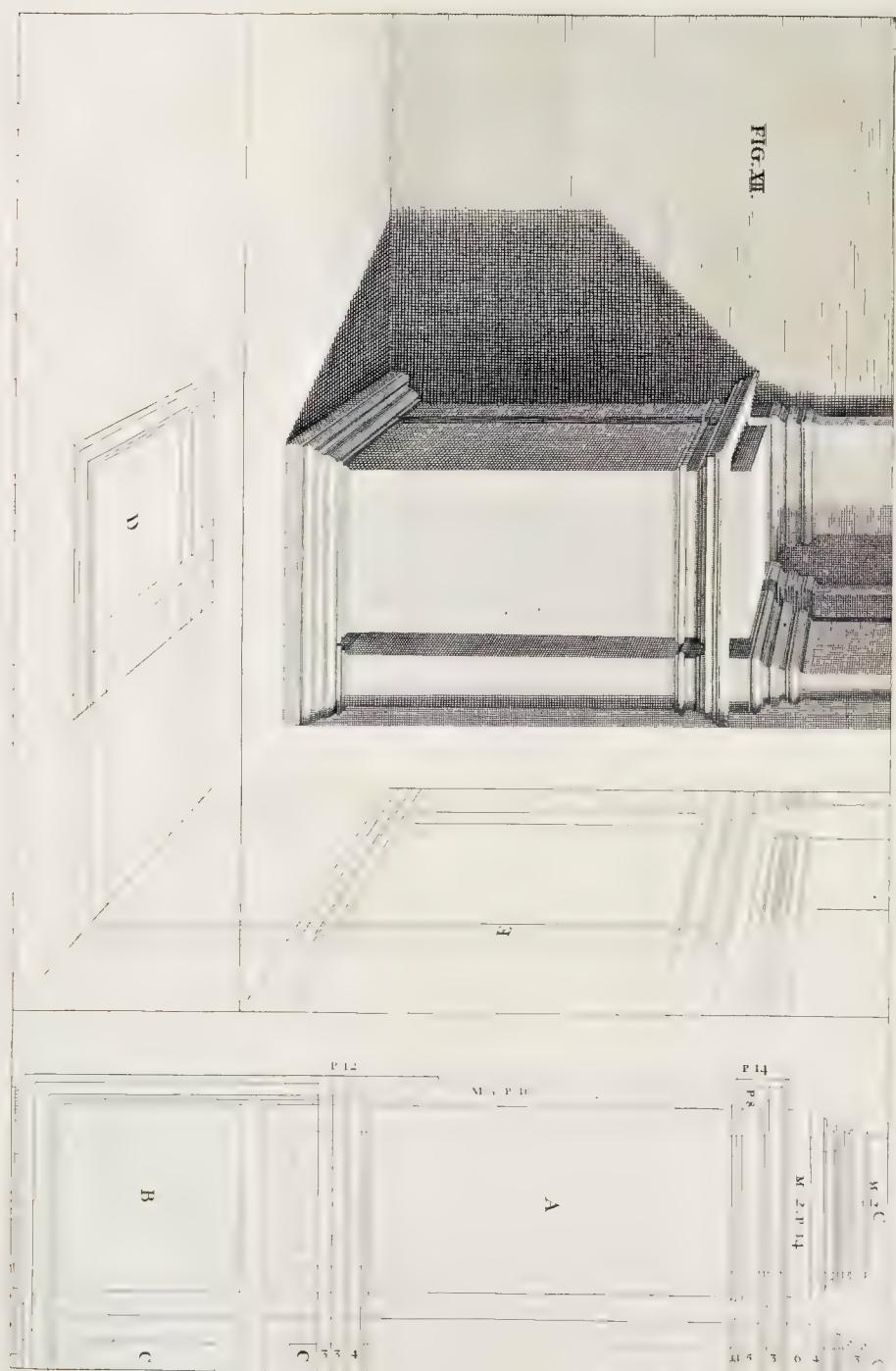
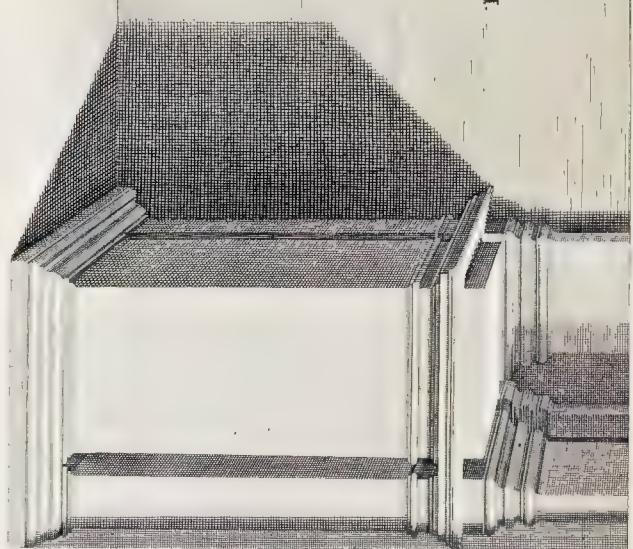


FIGURA Duodecima.

The Twelfth Figure.

Deformatio stylobatae Corinthii,
cum duabus pilis.



R NATUS gratiâ, stylobate
Corinthio additæ sunt pileæ
que pone columnas locari so-
lent. Ut autem pile clarius
apparet, columna omisso est,
cujus deformandæ rationem
nondum tradidimus. Mensuras omnes ex Ba-
rozzio acceptas esse demonstrat ipsum schema,
in quo elevatio geometrica stylobate est A; ve-
stigium eius geometricum est B: pile CC. Ve-
stigium optice contractum est D. elevatio longi-
tudinis stylobatae optice contracta est E, ac me-
thodo conficiâ ex iis eretur stylobata nitidus
.cum suis pilis.

The Corinthian Pedestal, with its Pilasters,
in Perspective.



OR Ornaments fake, we
have added to this Corin-
thian Pedestal the Pilasters,
which are usually placed
behind Columns: And that
they may be the more per-
spicuous, have left out the Column, not
having yet shewn the Manner of putting it
in Perspective. The Scheme shews the
Measures are taken from *Vignola*; in which
the Geometrical Upright of the Pedestal is
A; the Geometrical Plan of the same is B;
that of the Pilasters CC. The Plan in Per-
spective is D, the Elevation in Perspective
is E; from which the finis'd Pedestal and
Pilasters are drawn by the usual Method.

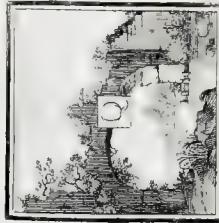
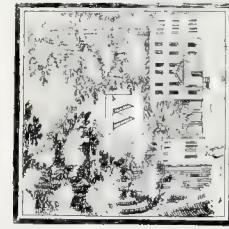
Figura Decimateria.

Projectio stylobatae, ordinis
Compositi.

The Thirteenth Figure.

The Projection of a Pedestal, of the Composite Order, in Perspective.

UVM pagina non caperet integrum stylobatum tantæ molles, fungere oportuit detractum illi esse aliquid de trunco; ac partem supremam stylobatae sustentari ab infima, non immediae, sed per quatuor afferes; eisque impositam suisse adjumento finium sufficiunt ex trochlea. Elevatio geometrica stylobate est B; vestigium geometricum est A. Ex his erit in optica delineatio vestigii C & elevations D. ac postea formatur stylobatu initialis E, accipiendo latitudines ex vestigio C, altitudines ex elevacione D.



ANTING Room in this Page to describe so large a Pedestal entire, we imagine it to have lost part of its Trunk, and the upper part to be set on the lower; not immediately, but on four Cross pieces that intervene; and for placing it thereon, we suppose the Assistance of Ropes and a Pulley. The Geometrical Elevation of the Pedestal is B; its Plan A; from whence are found their Projections in Perspective D and C. Then taking the Breadths from the Plan C, and the Height from the Elevation D, you complete the finished Pedestal E.

FIG. XIII.

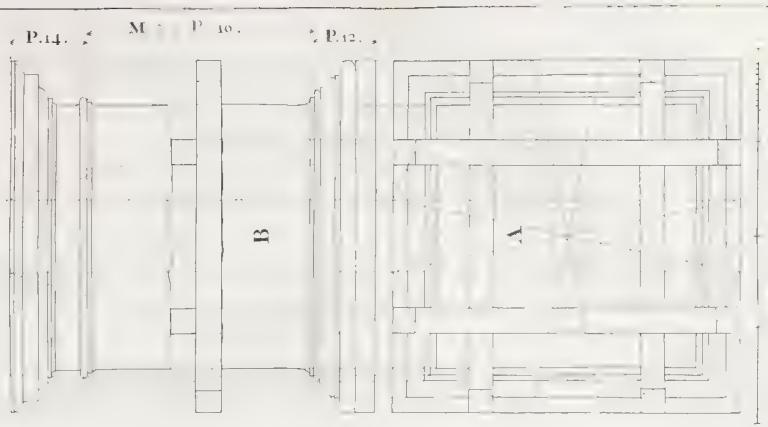
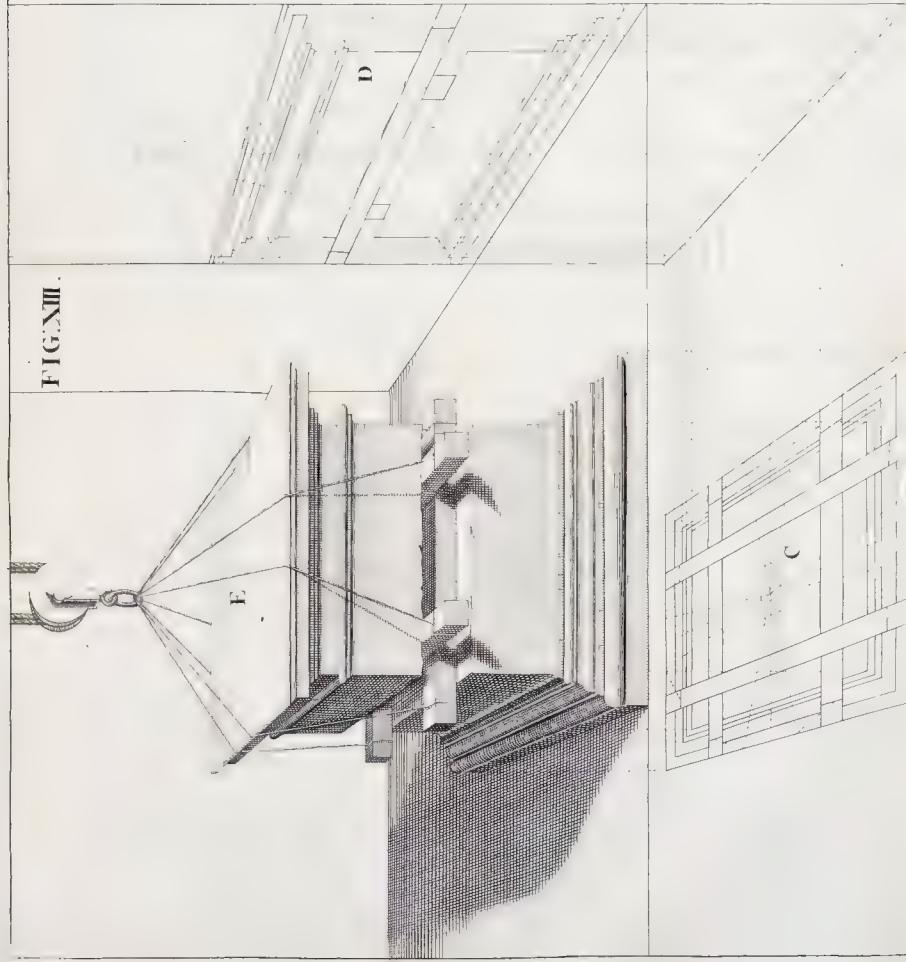




FIG. XIV.

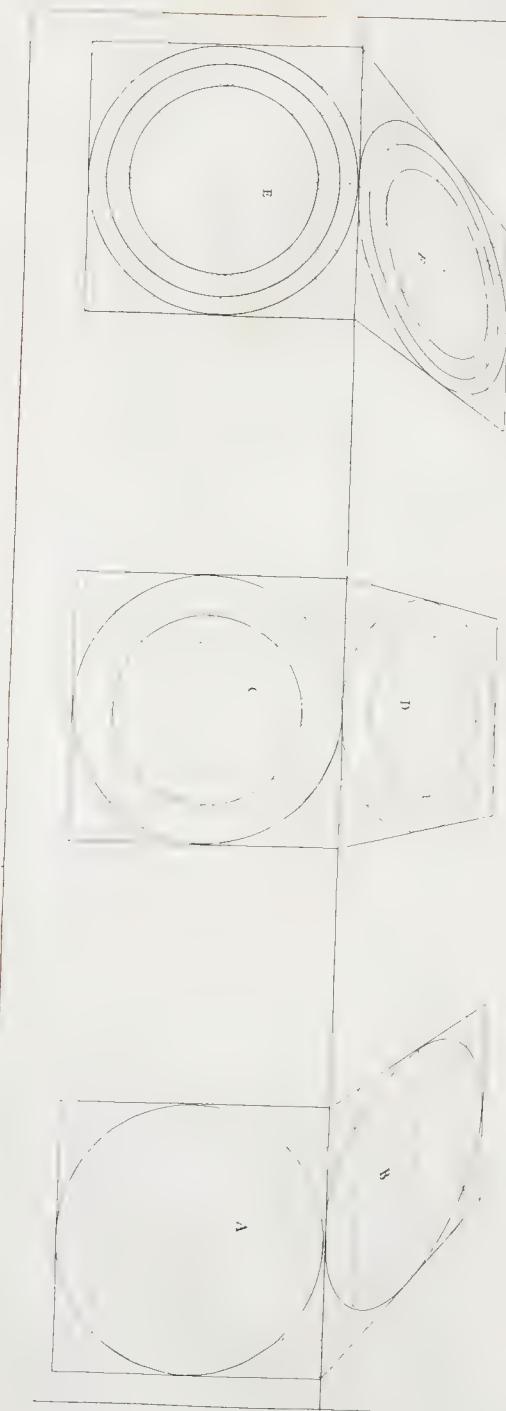


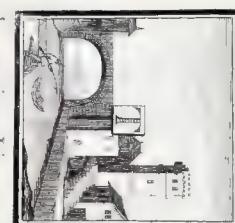
Figure Decimaquarta.

The Fourteenth Figure.

Circles in Perspective.



TA
syllobatis imponere licet columnas cum suis ba-
sis & capitulis, docendus est modus qui seruan-
dus est in proiecione optica circulorum, non finge-
lurum, non duplicitum aut multiplicum circa idon
centrum.



Perspectivum geometricum A confat quadrato in
quatuor partes aequales divisio, cui circulus inven-
tur, adhinc diagonalibus: & ubi haec secant circu-
lum, sunt recte parallela ad singula latera ipsius quadrati. Duode quadratum
cum omnibus trivisimbris optice munivit; ac tunc per quatuor puncta ubi tres
lineae recte se intersecent, non per quatuor extrema reliquorum diametrum diametro
rum circulorum, docetur cum veniente circumferentia B. Si adhuc velimus
alium circumferentiam, regilio geometrico C incribatur aliud quadratum; indeque ha-
batur optica delineatio dupliciti circuli D. Inter hos duos quatuor licet defini-
bere tertium, per ostio sectiones quadratorum, ostendunt figurae E & F. Ibo
verbis, circuli defensione, addiendo sectiones vixitum cum pa-
rallolis ad lineam plani; ac nullum est punctum in quadratis & circulis A, C, E,
qui per sectiones illas necesse impunit punctum correspondens in quadratis &
circulis B, D, F. Nihilominus ubi opus habebus pluribus circulis, aut tibi sum
ne multiplicares gaudias, plus conquisitus altiora tibi quam adjumenta,

HAT upon Pedestals you may be able to place Columns with their Bases and Capitals, it is requisite you should know the Manner of putting Circles into Perspective; whether single, double, or many concentrick.

The Geometrical Plan A consists of a Square with a Circle inscribed, whose Diameters divide it into four equal Parts; and the Diagonals being drawn where they intersect the Circle, continue Lines parallel to each Side of the Square. The Square, with all its Divisions, being put in Perspective; by the four extreme Points of the Diameters, and by those of the Intersections of the Diagonals, you neatly trace by hand the Circumference B. If you would add another Circle, you must inscribe another Square, as in the Plan C; from whence you find in Perspective the double Circle D. Between these two Circles, you may, by the eight Intersections of the Squares, describe a third; as is evident by the Figures E and F. In a word, all Circles are described by the Help of Squares, tracing them by the Intersections of the visual Lines, with those parallel to the Groundline: Nor is there any Point in either the Squares or Circles A, C, E, whose Correspondent Point may not be readily found by such Sections, in the respective Squares and Circles B, D, F. Nevertheless, where your Work requires many Circles, I would advise you to use as few Squares as possible; lest they perplex, rather than affit you.

Figura Decimaquinta.

Optica delineatio Columnæ.

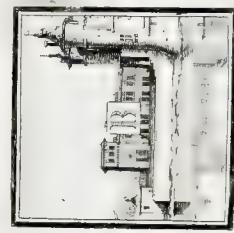
The Fifteenth Figure.

A Column in Perspective.



ESCRIPTRUſ fructum cylindricum I uniforme, fit elevatio A, & rectum geometricum B, ſicut quoad medietatem. Ex hoc optice deformato, ut radii in C, ducenti ſunt paralleli cum latitudinis ad vitudinem D, tam elevationis ad vitudinem E; ex quibus deſcribantur circuli optice contraſta F & L, accipiendo latitudines ex refugio C, altitudines ex perpendiculari M; & juxta hinc methodum circuit F & H, quic tangunt circulos F & L in punctis terminatis perpendiculares G & H, quae tangent circulos F & L in punctis terminatis maxime latitudinis.

Nihilum est prolationem in refugio C, cui per lineas latitudinis & elevationis neque inveniri locis correfontibus in circulo F. Exempli gratia; locus puncti Z ex punctum 6. Hinc autem locum habentes per tres lineas, CD, DF, FE, E7. In delineandis duabus fructibus cylindricis, can fanno & ino ſcapo, tandem regulam servare oportet.



TING to delineate Part of the Shaft of a Pillar without Projections, make the Elevation A, and the Geometrical Plan B, at least to the middle: From this brought into Perspective, as you perceive in C, must be drawn Parallels both of Breadth to the Vertical D, and of Elevation to the Vertical E: from which are described the Circles in Perspective F and L, taking the Breadths from the Plan C, and the Heights from the Perpendicular M: And according to this Method the Circles F and L are made, without the Help of Squares. Lastly, draw the Perpendiculars G and H, by the Points which terminate the greatest Breadth of the Circles I and L. There is not a Point in the plan C, but what, by means of the Lines of Breadth and Elevation, may be found in the Circle F. For Instance; the Place of the Point 6 is 7, which is found iuv the three Lines CD, OF, E7.

In delineating the two Pieces of a Pillar, with the Projecture of the latter at Head and Foot, you must observe the very same Rule,

FIG. XXV.

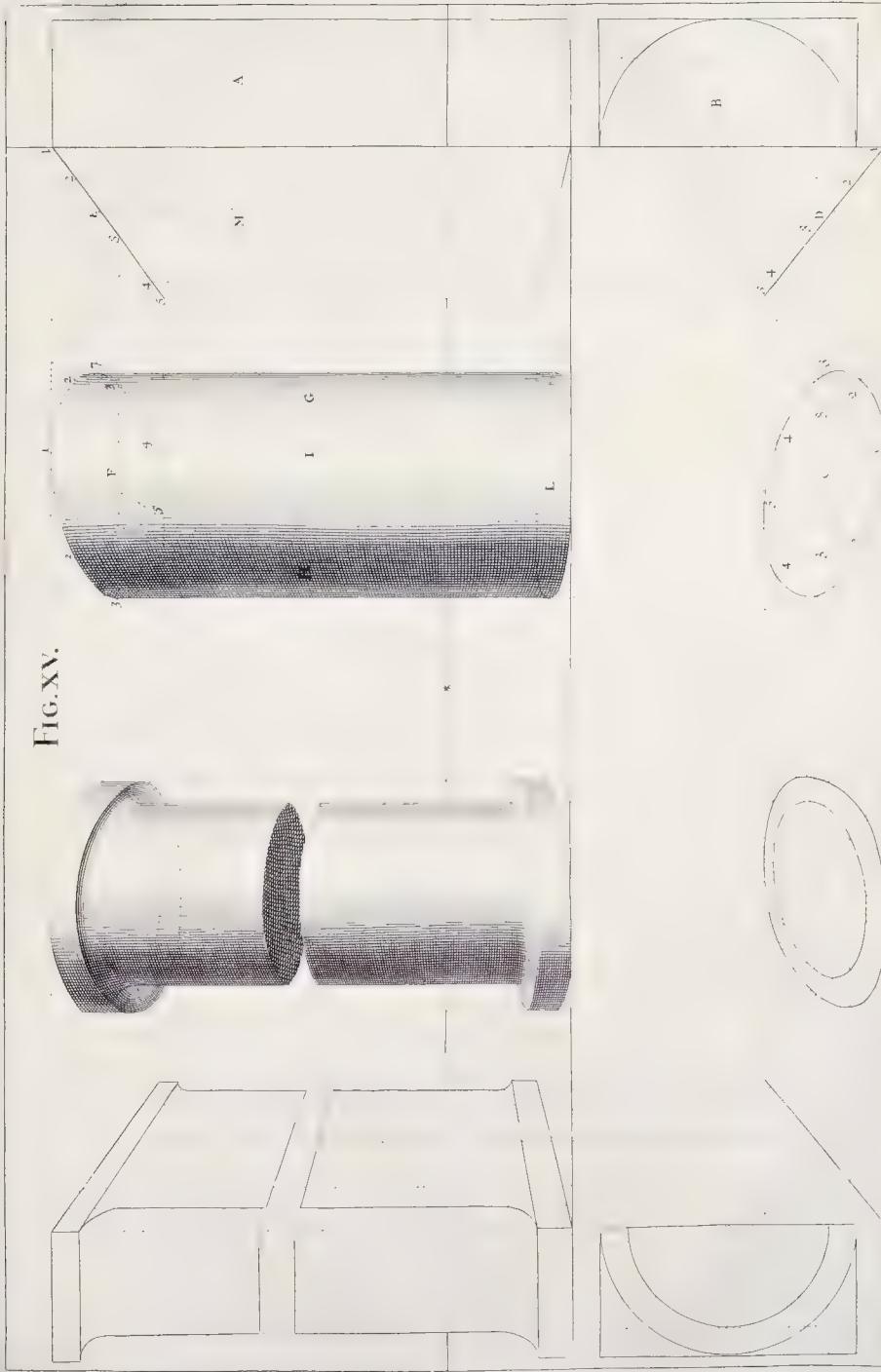




FIG. XVI.

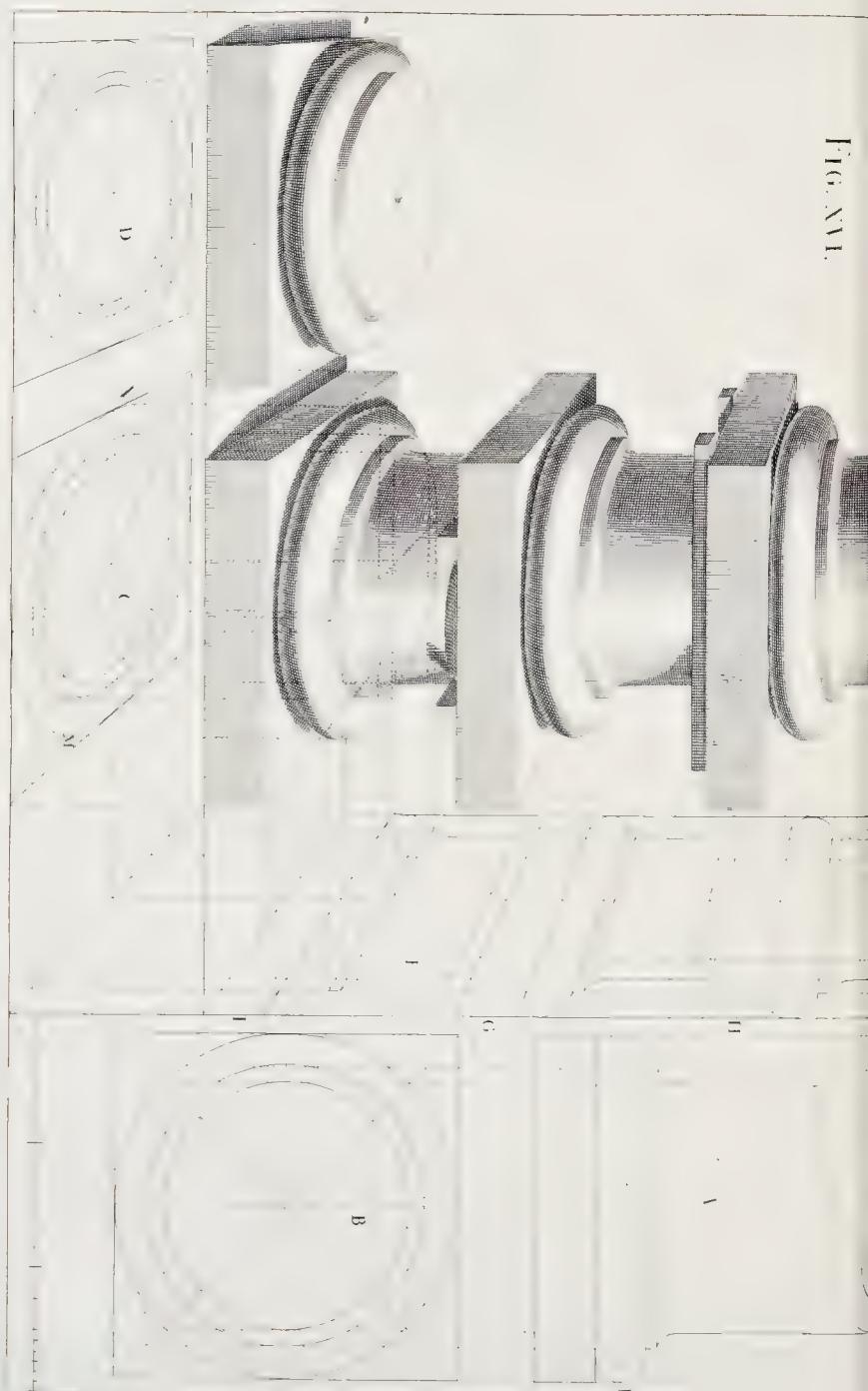
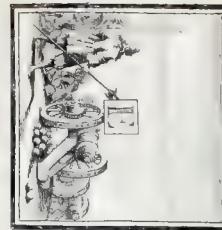


Figura Decimafesta.

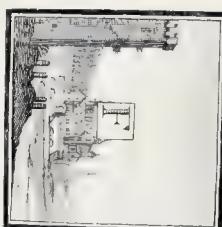
The Sixteenth Figure.

Optica projectio basis Etrusca.



*X elevazione geometrica A ensius vifigium B. Hoc mo-
rum deformatio in C & D, ex circulis vifigii C huius-
tar latitudine columnas quadrat, ac tori triplicis basi;
& eadem modo ex vifigio D huiusmodi latitudines quadrat
ac tori ultime basi. Ex maximis latitudinibus circulo-
rum vifigii C excoiuus perpendicularis ad partes que p-
ris refponsum in bafe; ut agnoscas quemam partem
maxime latitudine in eisdem partibus. Hic puncta (que
in circulo maximo refponit C) (non M & N) inveneris
magendo circumferentiam uniuscunque circuli reguli pa-
rallila ad lineam perpendiculariorem E, nam si figura exacte delineata fuerit, regulae iungere
figurato toro trium basium in partibus maxime hinc inde latitudinis.*

*Magis liborandum erit in reperiendis altitudinibus quatuor basium. Porro si sedulo imp-
licitius deformatio elevationis F, aliamque diuina, (que fuisse sunt, notatis in linea per-
pendiculare E, ita iufidioris defauit ex elevatione geometrica A) confabiri, nullum effe pun-
ctum in circulis refponit C, cuius magis inviri posuerit correspondunt in toro & quadrata
basis, ut offendant linea octaua, que incipiunt ex M & N. Earum qualiter ex ve-
rificatio C perent ad lineam vifigium, & continuant cum linea altitudinis ex vifigia ad ea
deuisionem F, & cum aliis lineis latitudinis ex elevatione F ad basim. Porro ex figura con-
fut, superficie superiorum quadrat Juxta vici columnas, & aliud ex parte polica tori
quod extraequi conseruerit, defonci a quadrati. Proinde tonus, qui ex punctis maxime la-
titudinis retrosum reficitur, ex quo delineantur cf, quaud hinc inde occurrit quatuor iufigium
cooperenti. Prefaciat autem hujus membris ita exesse delinari, quan offert diaphana; ut
partes oculis impercepte, omnino colorante cum partibus que ipsi, coniunctae sint.
Completa delinatione, si figura tuum ex perpendiculari punti oculi ex dicta difensione con-
templatus fuerit, omnes defectio facile deteges & statim corriges. Pracipuam diligenter
ponis in formando & emendando toro, qui habet duas roundinas; nam quatuor ambi co-
lumnam; etiam quatuor certi anguli, ut obsondis elevatio geometrica in L.*



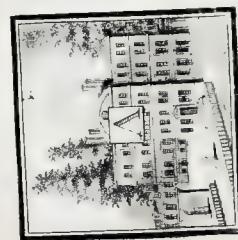
*ROM the Geometrical Elevation A, is drawn the Plan B; which being put into Perspective, as you see in C and D, from the Circles of the Plan C, you have the Breadths of the Column, and of the Lip, and *Torus* of the three Basins: And after the same manner, by the Plan D, you have the Breadth of the Lip and *Torus* of the last Basin. From the greatest Breadth of the Circles of the Plan C, we have erected Perpendiculars to the Parts that answer them in the Base, to the end that you may see where the Points fall, which terminate the greatest Breadth of those Parts. Three Points (which in the greatest Circle of the Plan C are M and N) are found by touching the Extremity of the Circumference with a Line parallel to the Perpendicular E: for if the Figure were exact, that Line would touch every *Torus* of the three Basins in the extreme Points of their Breadth.*

*The Heights of the four Basins are something more difficult to be found. Nevertheless, if you consider well the Elevation F, and the other two G and H, (which are made by tranporting the Divisions of the Elevation A upon the Perpendicular E) it will plainly appear that there is no Point in the Circles of the plan C, to which there may not be a correspondent Point found in the *Torus* and Lip of the last Basin; as the occult Lines shew, that arise from M and N; each of which is a Continuation of three Lines: The first of Beachth, from the Plan C to the Virtual; the second of Height, from the Virtual to the Elevation F; the third of Breadth, from the Elevation F to the *Bafe*. Now, tho' it's plain by the Figure, that the Body of the Column prevents the Sight of good part of the Fillet, and the same Fillet takes off from part of the *Torus*, which would otherwise be visible; for which Reason the Back-part of the *Torus* is covered only till it meet the lame. Yet it's certainly best to draw every Member complete, as tho' the Work were transparent; that the Parts hidden from the Eye may the better agree with those that are exposed to it.*

*When our Draught is finished; you'll view it at the due Distance, and perpendicular to the Point of Sight; you'll readily discover and rectify what's amiss. Your chief Care will be employed in shaping the *Torus*, difficult by reason of its Roundness both ways: namely, in the Contour of its Moulding, as in the Elevation I; and in the Circuit it makes about the Column.*

Figura Decimaseptima.

Deformatio basis Doricæ.



Dicitandam sicut etiam quam pareret nimia uniformitas, ut nam ex basibus invertimus. Utraque autem basis delineata est methodo quam tradidimus figurâ praecedenti. Eademque methodus adeò manifestè patet ex lineis occultis latitudinum & elevationum, ut superfluum futurum sit ipsam repetere.

The Seventeenth Figure.

The Dorick Base in Perspective.



HAT you may not be tir'd with practising one and the fame thing, I have here, for Variety-sake, inverted one of the Bases. Both of 'em are drawn after the Manner explain'd in the foregoing Figure; which is so evident from the occult Lines of the Plan and Elevation here given, that I think it superfluous to say any more of it.

FIG. XVIII

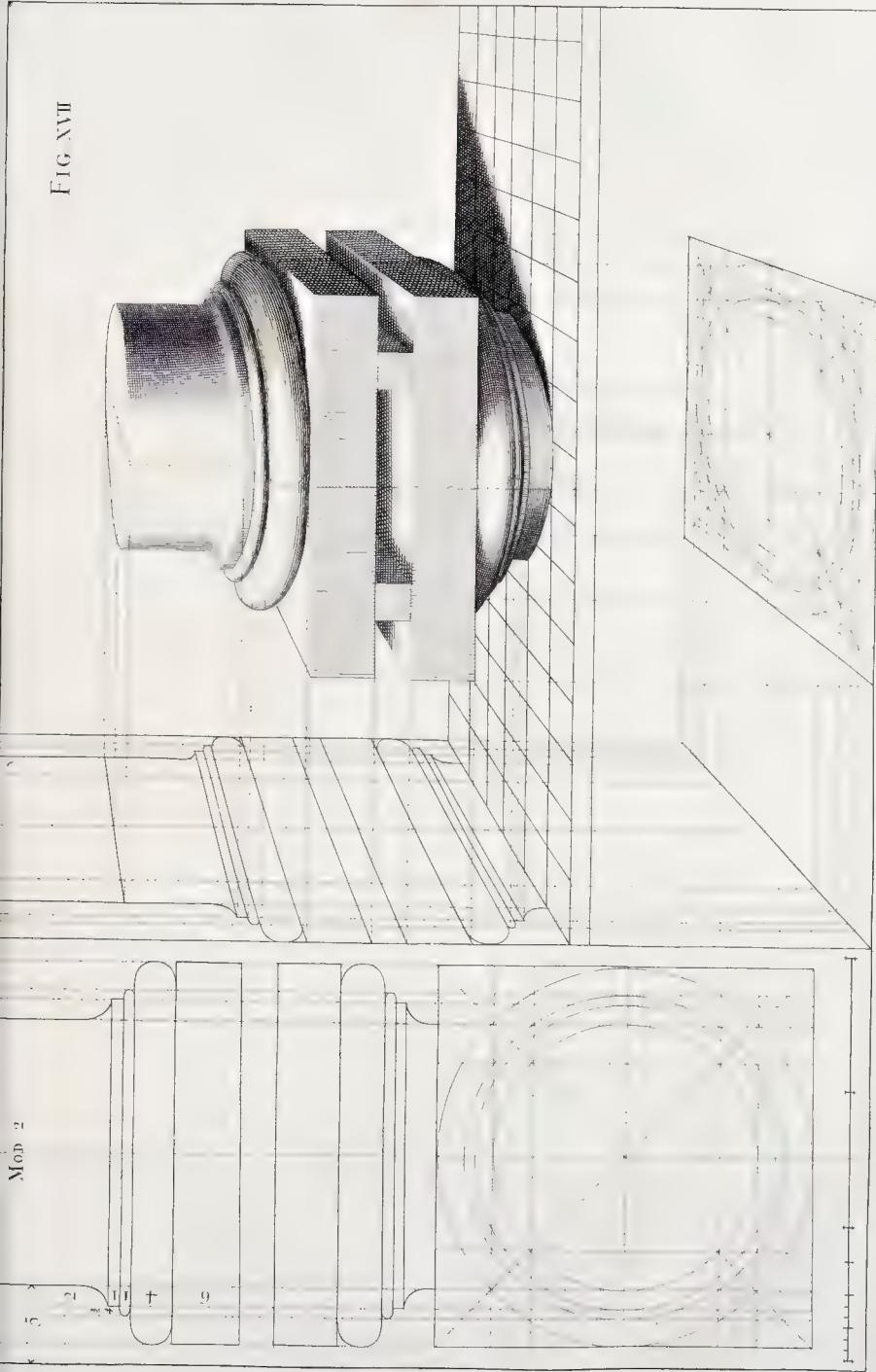




FIG. XVIII.

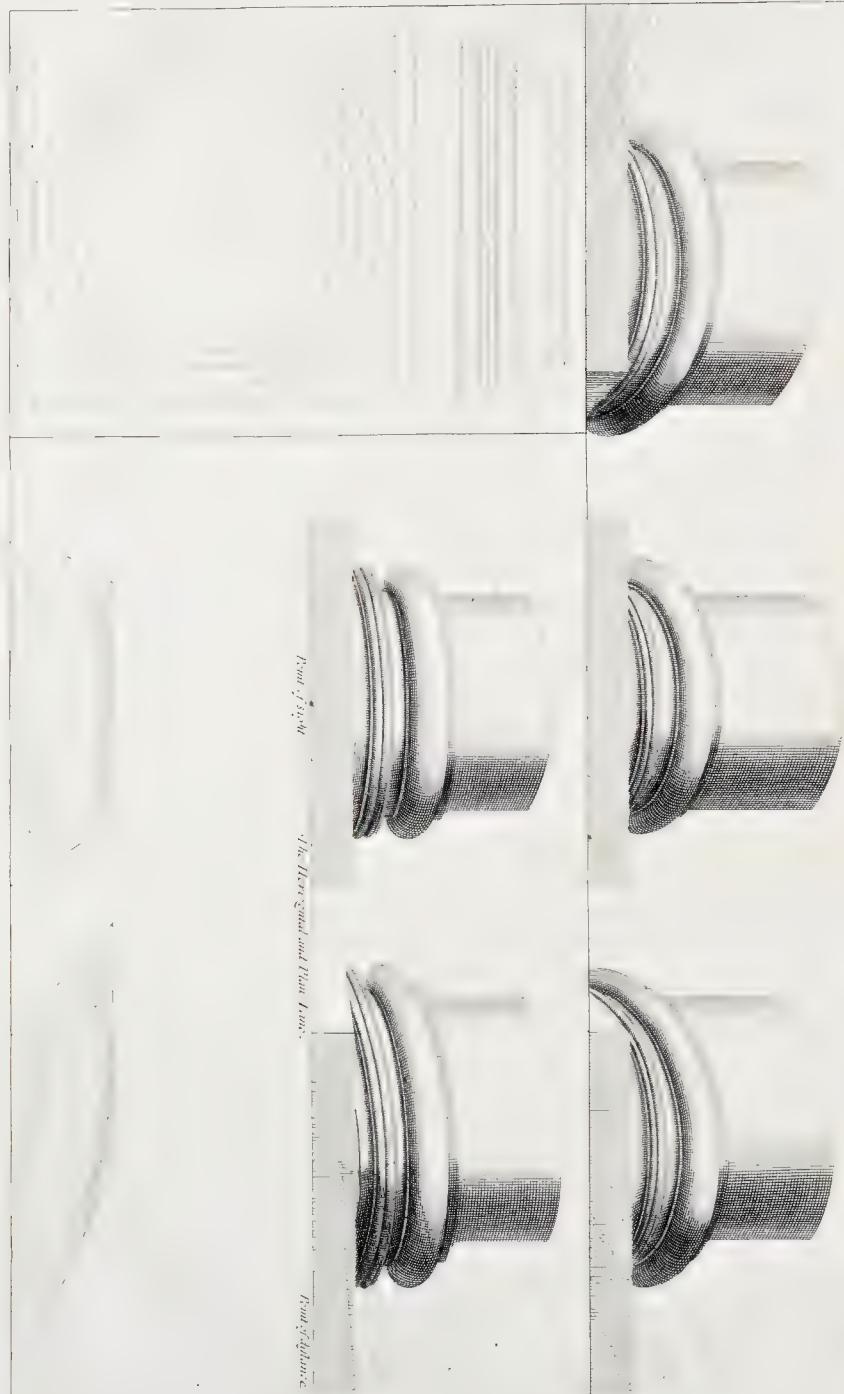


Figura Decima octava.

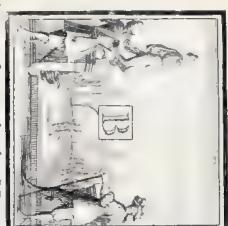
Optica delineatio basis Ionicæ.



X multitudine ac varietate figurarum hujus Operis, dicas, mi Lector, modum deformandi res domijfus & subiuntes, magnas & parvas. In hac figura, linea cui bases duarum columnarum incidunt, est coniunctum linea plani, & linea horizontalis; linea cui bases trium columnarum incidunt, est alter linea horizontali. Quemadmodum autem, si linea plani sit inferior linea horizontali, linea que tendunt ad punctum oritur & ad punctum distante, ascendit sursum; ita si linea plani sit superior horizontali, linea que veniunt ad punctum oculi & ad punctum diffinient, tendunt deorsum. Quod si in eadem tabula sint plana plana, eorumque aliquae sint altiora, alia vero demissiora linea horizontali, linee omnes planorum, ac linea horizontalis, sunt invicem parallelae; adeoque ex linearibus, que omnes eas normulter fecerit, statim dignoscet potest, in qua proportione, singula plana sint altiora vel profundiora linea horizontali. Velma quoque observes, latitudinem columnae mediae, minorem esse latitudine columnarum laterium; & discrimen inter hujusmodi latitudines eò est nujus, quod punctum distante frumenti fuerit vicinus puncto oculi. Que dicta sunt de columnis, intelligere ostendit de basibus, & de optica delineatione ambientum. Nihilominus, si figura ex debito puncto inscripta, columnæ pictæ habebunt eandem apparentiam, quam haberent columnæ solidæ, invicem æquales.

The Eighteenth Figure.

The Ionick Base in Perspective.



Y the Multitude and Variety of Figures in this Work, the Reader will be instructed in delineating things, however different in Size or Situation. In this Figure, the Line on which the two Columns rest, is both the Horizontal and the Ground-line; that on which the three Columns are plac'd, is so much higher than the Horizontal Line. And as, where the Ground-line is beneath the Horizontal, the Lines drawn to the Points of Sight and Distance tend upwards; so, where the same is above the Horizontal, the Lines to the Points of Sight and Distance tend downwards. If in the same Picture there are different Grounds, some higher, others lower than the Horizontal Line; yet are all those Ground-lines, and the Horizontal, parallel one to another; and therefore, by a Line cutting them all perpendicularly, you presently know in what proportion each Plan or Ground is higher or lower than the Horizontal. I would have you observe, That the Breadth of the middle Column is, by the Perspective, rendered less than that of the Side-Columns; and that this Difference is the greater, as the Point of Distance approaches nearer to the Point of Sight. What has been said of the Columns, is also to be understood of the Bases, and the Projections of all their Parts in Perspective: Nevertheless, if the Picture be view'd from its due Place, the Columns will have the same Effect, as if solid; and all appear equal one to the other.

Figura Decimonia.

Optica immunitio basis Corinthia;
AEC basi juxta regulas tradi-
tias optice contraria est.
Porrò altitudo superficie A
est eadem cum altitudine li-
nea visualis CD; latitudo
crucis A est eadem cum la-
titudine secundi circuli vestigii B, inci-
piendo à minimo omnium. Due linea norma-
liter infixa basi, ostendunt maximum latitudi-
nem quam habere debet columna supra immi-
scapum. Maxima latitudo tori superioris &
uniusque affragali, est eadem cum maxima
latitudine tertii circuli. Maxima latitudo to-
ri inferioris est eadem cum maxima latitudine
ultimi circuli.



The Nineteenth Figure.

The Corinthian Base in Perspective.



HIS Base is put in Perspe-
ctive by the Rules before
laid down. The Height
of the Superficies A is the
same with that of the visu-
al Line CD; the Breadth
of the Cross A is the same with that of the
second Circle of the Plan B, beginning with
the least. The two Lines that stand per-
pendicularly on the Surface of the Base,
shew the greatest Breadth of the Columns
Shaft above the Fillet. The Extent of the
upper *Torus* and the two *Astragals*, is the
same with that of the third Circle; and the
Extent of the lower *Torus* is the same with
that of the outward Circle.

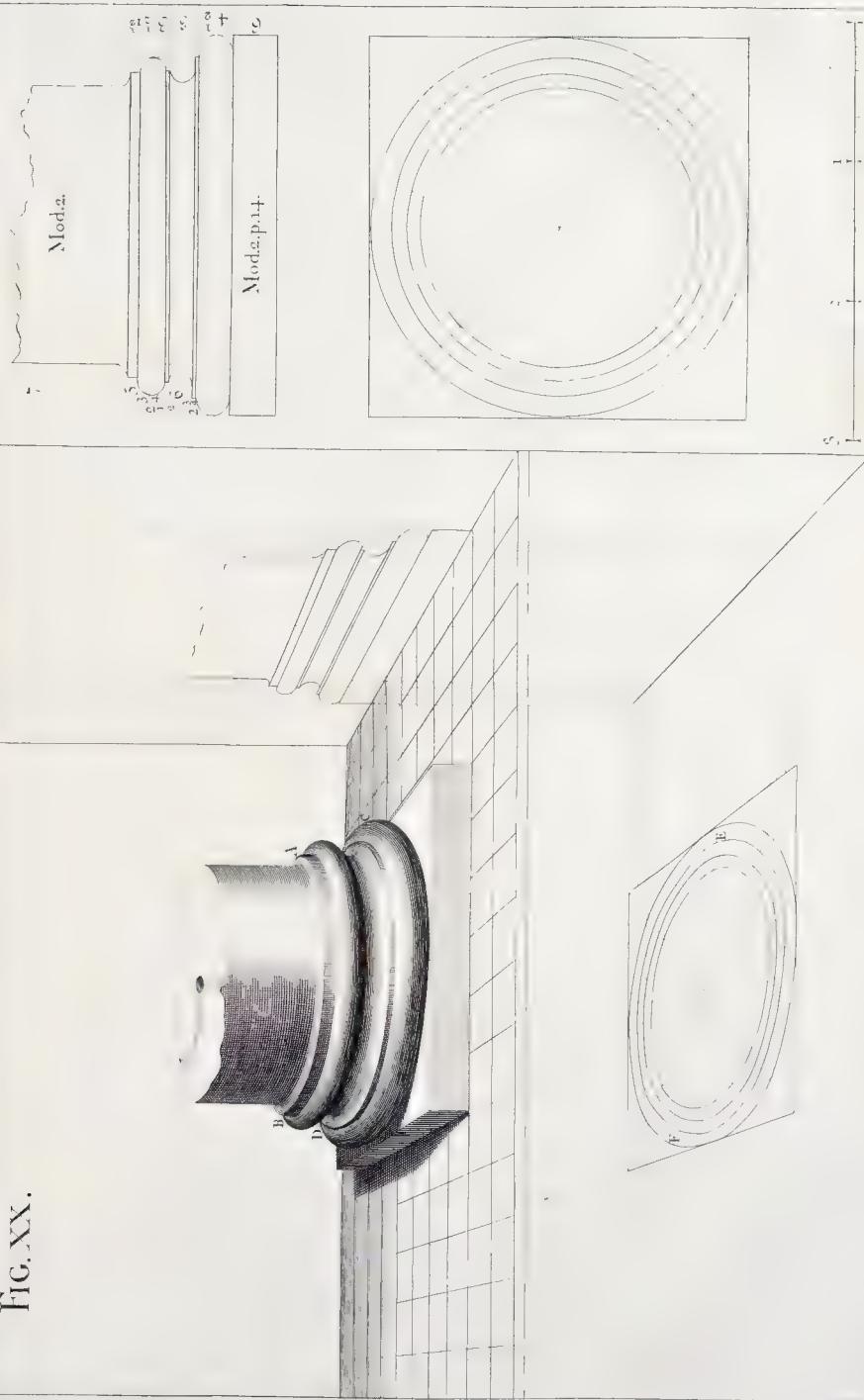


FIG. XX.



FIG. XX.

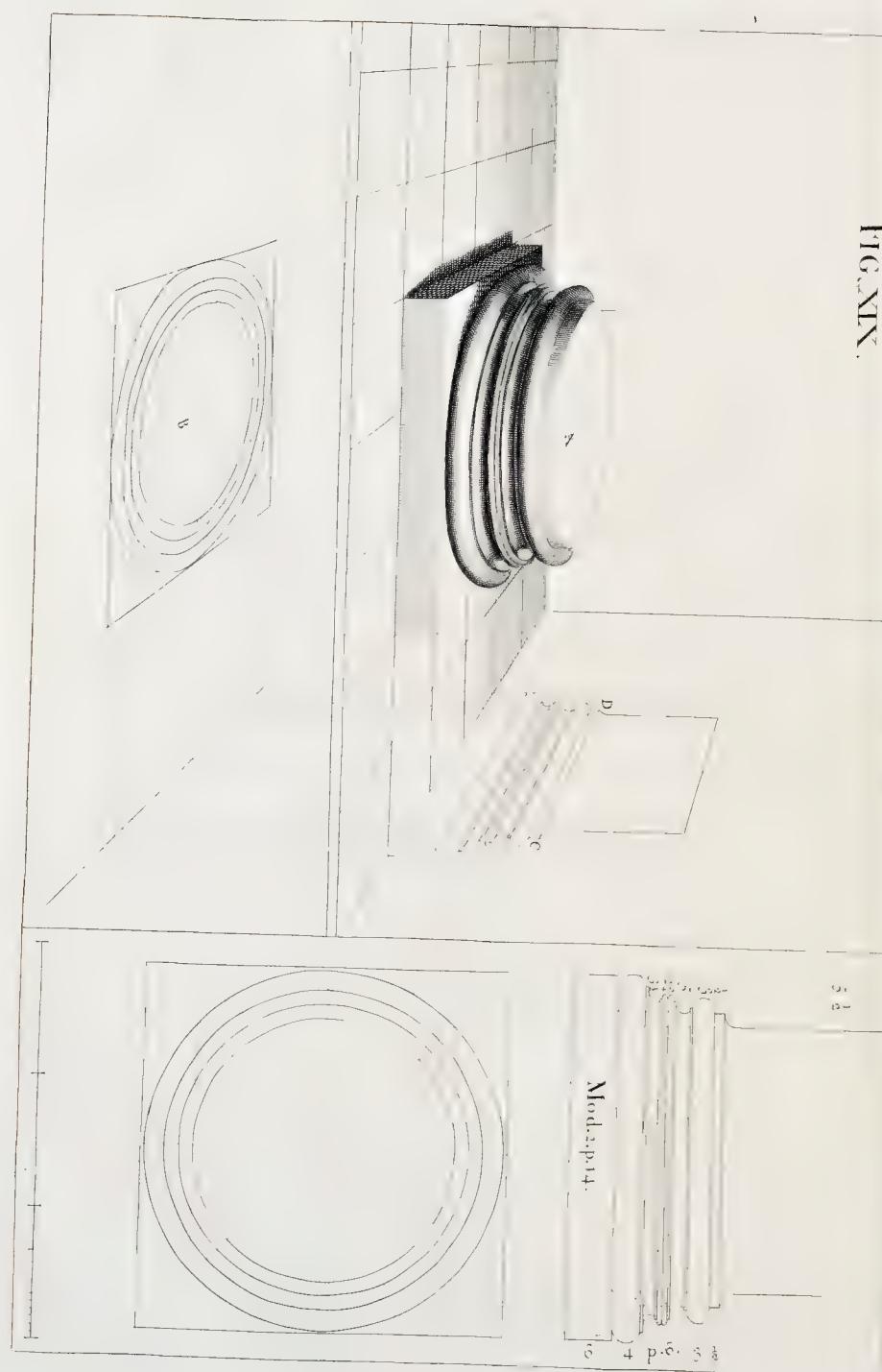


FIGURA VIGINTIMA.

The Twentieth Figure.

The Attick Base in Perspective.



Basis Atticura optice immunita.

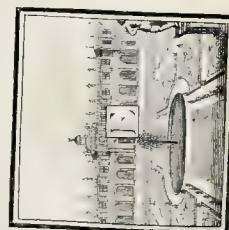


ASIS Atticura Pictoribus
præ reliquis familiaris est,
quia cum omnibus ferè Ordinib;
nibus egregie consentit. Por-
rò ex punctis E & F maxi-
ma utrinque latitudinis exten-
sionis circuli vestigii, habetur maxima latitudo
torri inferioris CD. Ac cetera que p̄fendant
ad ipsum & ad torum AB, petenda sunt ex
dictis de basi Etrusca.

HE Attick Base is more frequently made use of by Painters, than any other; because it suits well with most of the Orders. The Points E and F, the greatest Breadth of the outward Circle of the Perspective-Plan, give the greatest Breadth of the lower *Torus* CD. And whatever else relates either to this or the upper *Torus* A B, is to be sought in the same Manner, as has been shewn in the *Tuscan* Base.

Figura Vigesimaprima.

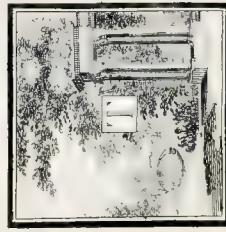
Optica imminutio capitelli Etrusci.



ADEM cuni reliquis formâ, èdemque methodo capitella delineanda sunt: quum habeant ipsa quoque sum circatum quadratum, & sint rotunda. Linea plani sot in iis fieri altior linea horizontali: quia quum capitella impounda sint columnis horizontibus, plerumque apparent sublimiora nostris oculis.

The Twenty-first Figure.

The Tuscan Capital in Perfection.



HE Manner before deliverd concerning Bases, is of the same Use in delineating Capitals; forasmuch as these also have their square *Abacus*, and their round Members. The Ground-line in Capitals is usually plac'd above the Horizon; because when they are set upon Columns which exceed a Mans Height, they are generally represented above the Eye.

FIG. XXI.

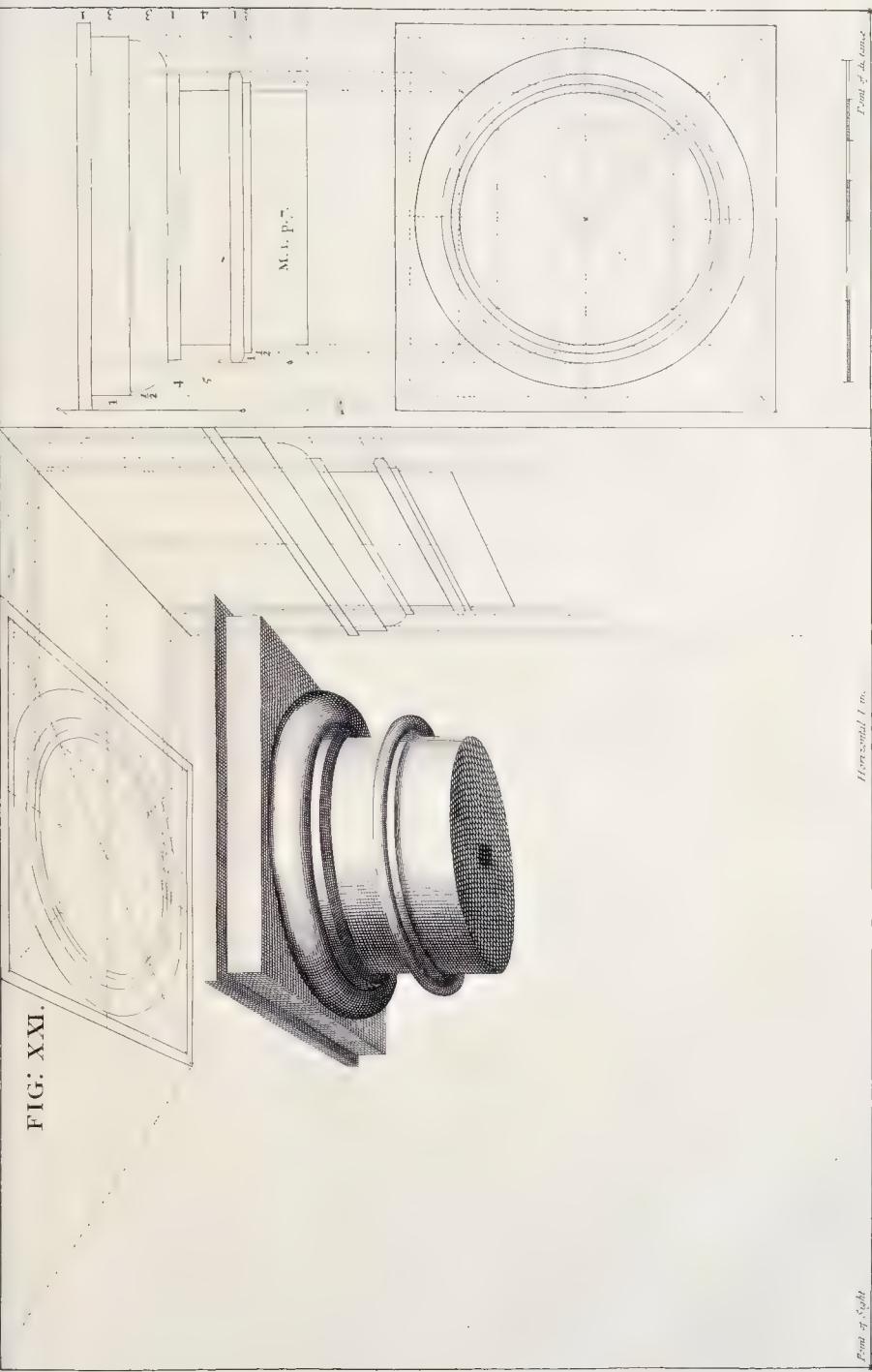






FIG. No. III.

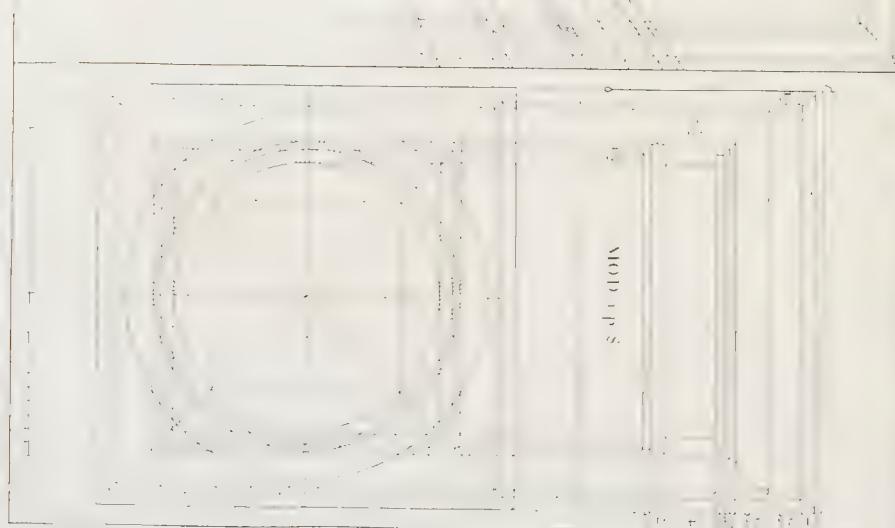
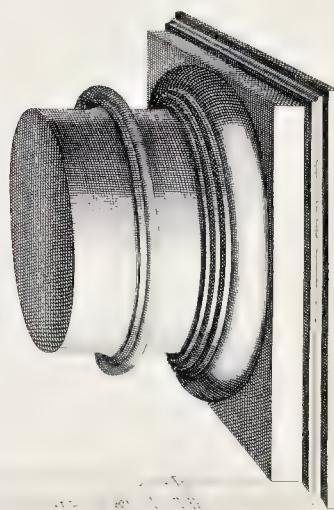


Figura Vigesima secunda,

Twenty-second Figure.

Optica projectio capitelli
Dorici.

*The Projection of a Dorick Capital,
in Perspective.*



*APITELLUM hoc pluribus
membris consistat, adeoque o-
perius est quam praecedens.
Nibilominus accurata deline-
atio vestigii geometrici omnes
difficultates complanabit.*

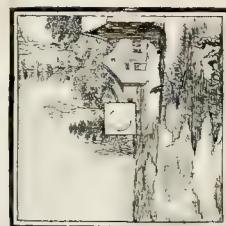


HIS Capital consisting of more Members than the foregoing, will be more troublesome to put in Perspective; but an accurate Delineation of the Geometrical Plan will certainly remove many seeming Difficulties.

Figura Vigesimateria.

Deformatio capitelli Ionici.

APITELLUM Ionion p[ro]f[und]itatis elevations geometricas definitas, alteras faciat, alteram latitudinis, ex usque confinie nefligat geometram A, quod optice contrahatur, transflatus in B punctus latitudinis C, & in E punctus longitudinis D more conjuncto : ut ex punctis B latitudinis, linea tenuit ad punctum oculi ; ex punctis vero E longitudinis, linea tenuit ad punctum diffinientem.



Ex nefligio capitelli optice contracto oracula est elevatio longitudinis ut in figura. Ex uniusque vero iuxta morem ficit capillum nundum, accipit latitudibus ex nefligio, altitudibus ex elevacione longitudinis. Hac quoque debet maximum latitudinem frigularium volutiarium.

Molton delineandi capillum Ionium, in quo belices volutiarum obliquentur, disimus infra figurâ triginta.

Twenty-third Figure.

The Ionick Capital in Perspective.



THE Ionick Capital requires two distinct geometrical Elevations, one of the Front, the other of the Side ; from both which is found the geometrical Plan A, which is put in Perspective by transferring into B the Points of Breadth C, and into E the Points of Length D, after the usual Manner ; that from the Points of Breadth B, Lines may be drawn towards the Point of Sight, and from the Points of Length E, towards the Point of Distance.

From the Plan of the Capital in Perspective, is to be drawn the Upright of the Length, as in the Figure ; and from both, as usual, the third Capital is wrought, by taking the Breadths from the Plan, and the Heights from the Elevation ; this giving the utmost Height, and that the utmost Breadth of each of the Volutes.

The Manner of delineating the Ionick Capital, whose Volutes lie obliquely, we shall hereafter treat of in the Thirtieth Figure.

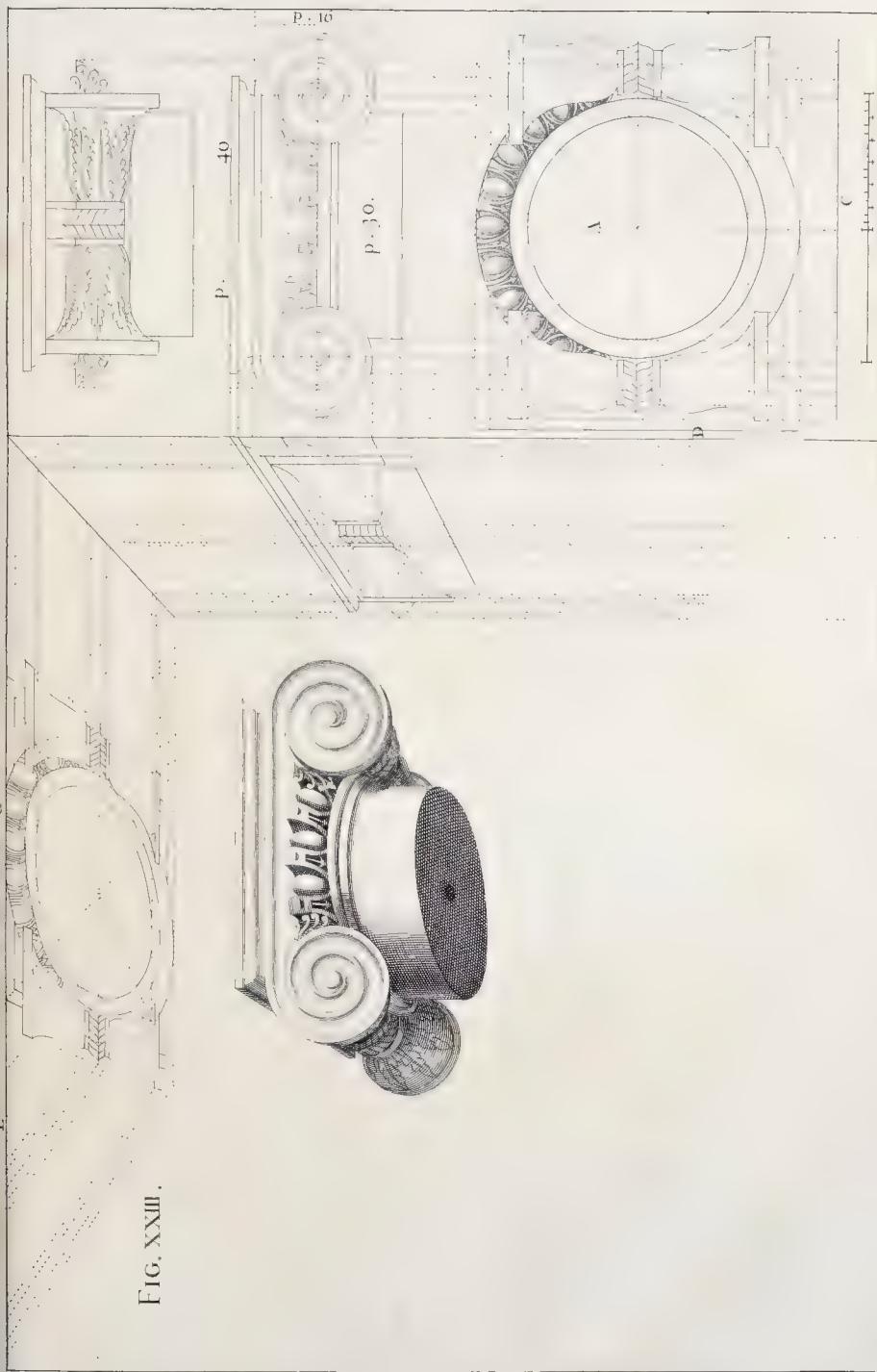


FIG. XXIII.



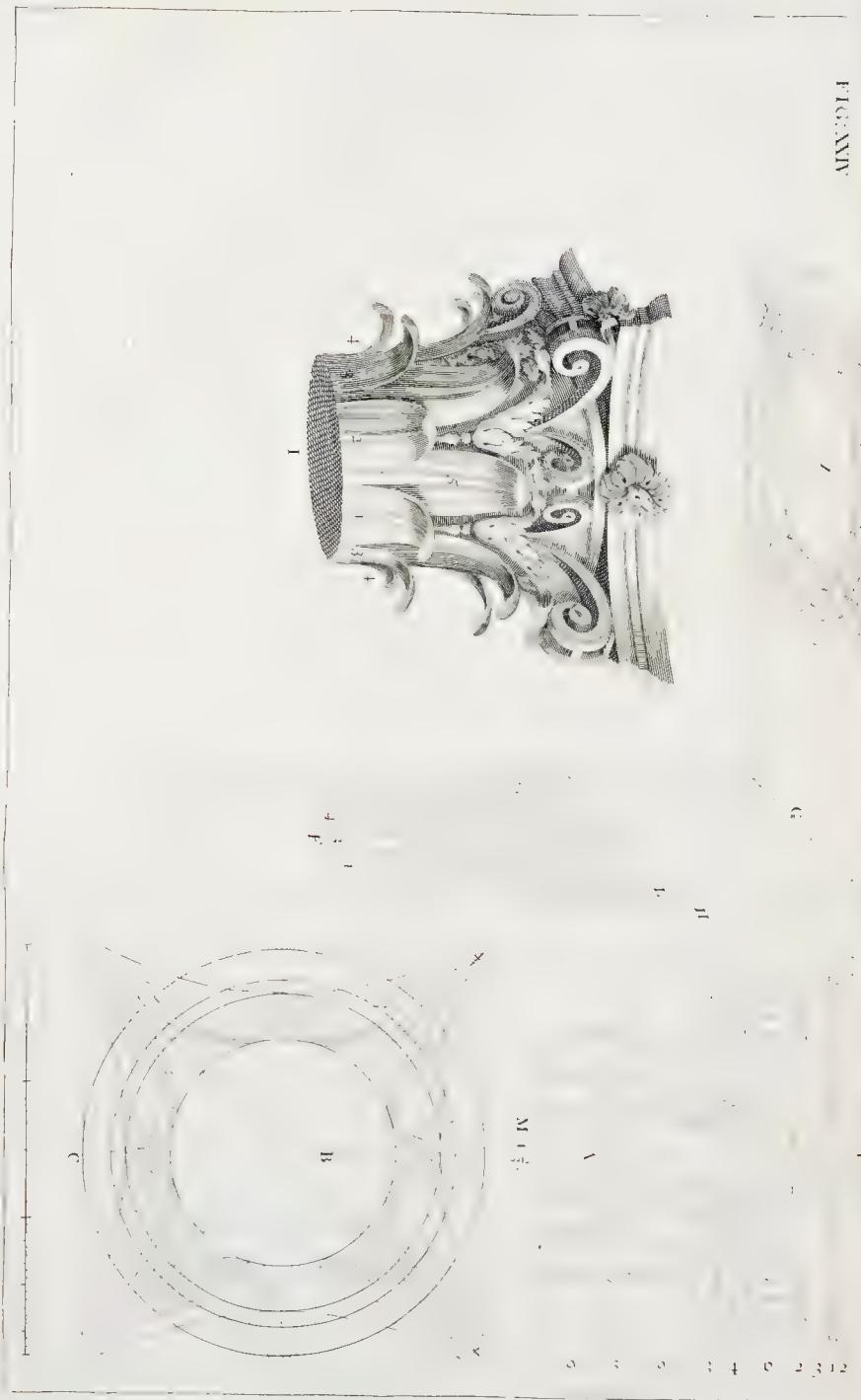


Figura Vigesimaquarta.

Optica projectio capitelli Corinthii.



APITELLUM Corinthium absolvere non poteris, nisi elevatione geometrica eyle que vestigio eius occulis fuerit quadrata mecessara ad contrarium opticanum quartum vel trium satum circulum; translatis in lineam D divisionibus line C, & alius, more confuso. Contrahetur deinde linea occulis vestigio foliorum, & absoventur cetera que possunt sunt in vestigio E.

Ut fiat optice elevatio longitudinis F, in lineam perpendicularem H transforentur ex elevatione A omnes eius divisiones. Complebitur autem per lineas rectas, que ex punctis divisionum ducantur ad punctum oculi, ac per rectas ex circumferentia summate ac profundante, que recte sunt parallela ad lineam D, ac perveniant ad vultum G, indeque descendentes, ac sunt parallelae ad lineam perpendiculararem H.



HERE is no Completing the Corinthian Capital, unless you most accurately describe its Geometrical Elevation and Plan, according to the Rules of *Vignola*.

Being to form the Plan E from the Plan B, you must, with occult Lines, make the Squares necessarily for bringing four, or at least three of the Circles into Perspective; transferring into the Line D the Divisions of the Line C, and the rest as usual. Then, with other occult Lines, contract the Plans of the Leaves, and finish what's farther requisite in the Plan E.

To make the Optick Elevation of the Length F, you must transfer into the Perpendicular H all the Divisions of the Elevation A; and complete the same, by Lines drawn toward the Point of Sight, till they meet their respective Perpendiculars; which proceeding from all parts of the Circles parallel to the Line D, intersect the Visual G; from whence they descend, Parallel to the Perpendicular H.

In working the clean Capital, you should begin with the lowest Circle I, which denotes the Compass of the Column. Then make the Leaves 1, 2, by taking their Breadths from the Plan E, with the Compass, & placing them upon the Line H; and their heights from the Elevation F, keeping one Point on the Line D. The same must be done, as well by the Leaves 3, 3, 4, 4, as by the Leaf 5, and the others; and last of all, by the *Abeus* also; the Sinking of the Horns whereof answers that of the visual Line L.

Figura Vigesimaquinta.

Optica descriptio capitelli Compositi.

The Twenty-fifth Figure.

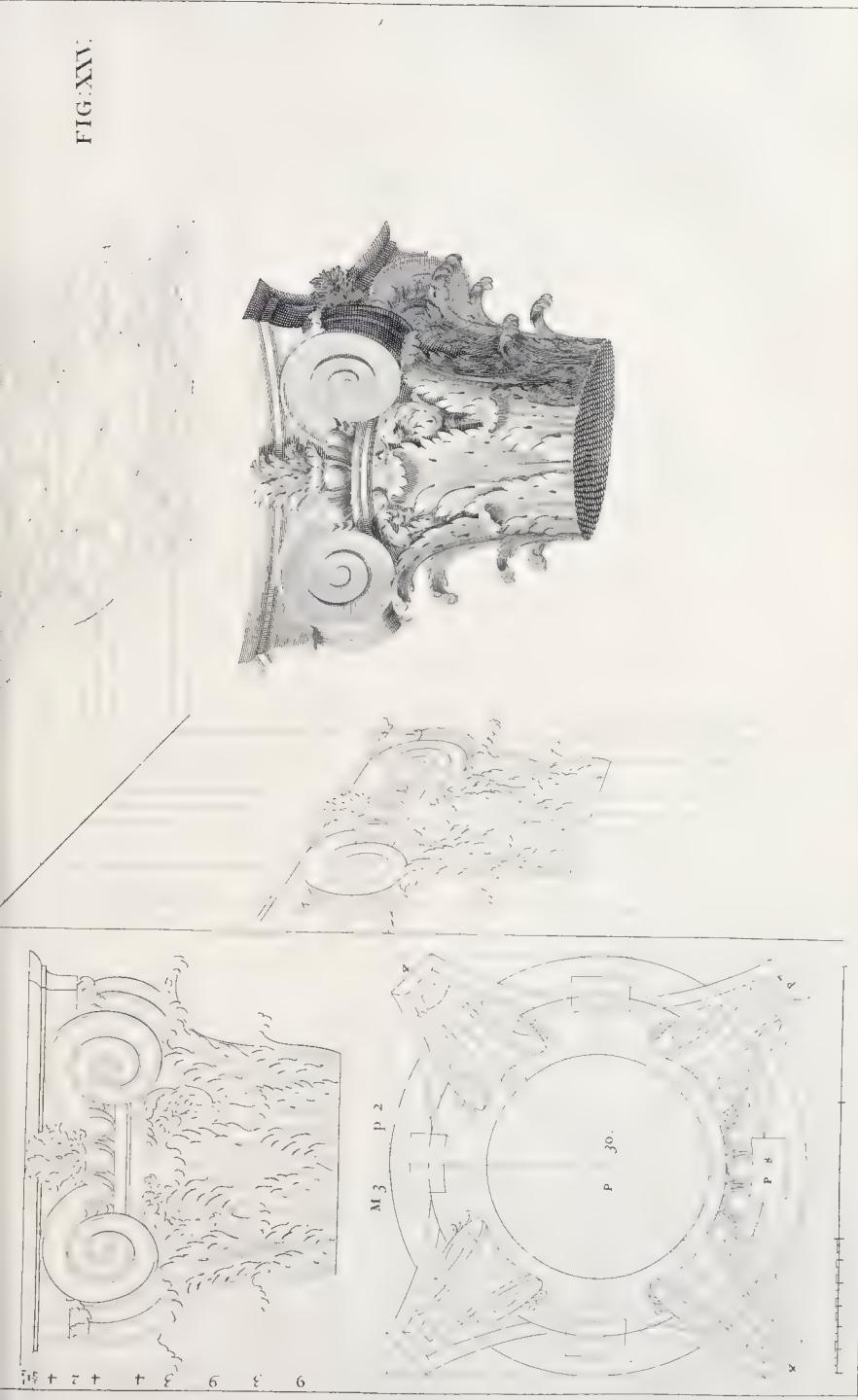
The Composite Capital in Perspective.

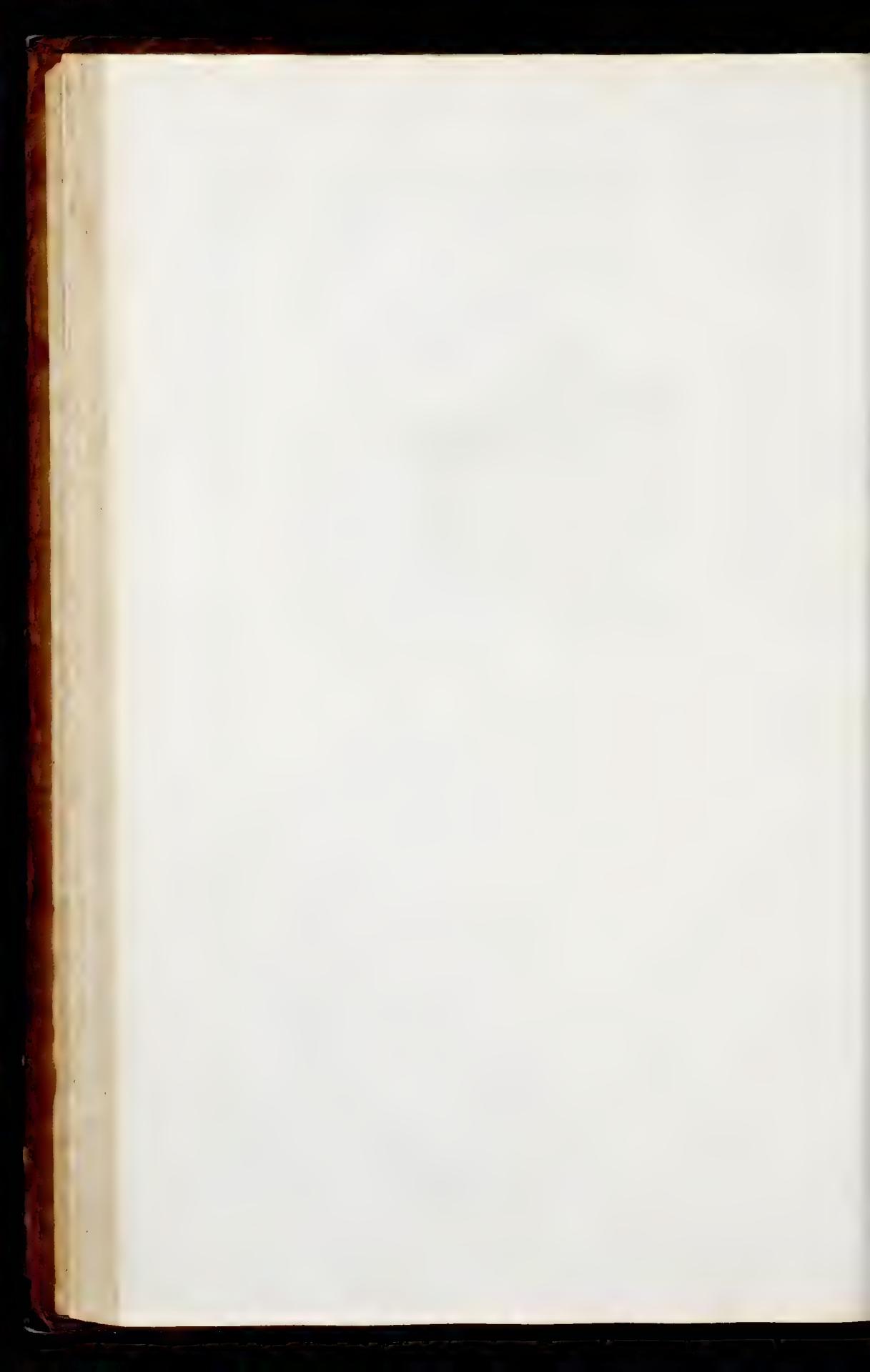
Xiiis que diximus de capitello Corintio, didiceris modum faciendi capitellum Compositum. Velim autem tibi persuaderas, cum lectione harum regularum qua sunt magistri inanimes, circini usum perpetuò coniungi optere. Hic enim vivi magistri defectum unicè supplere potest.



ROM what has been said of the *Corinthian* Capital, may be learnt the Manner of putting the *Composite* also into Perspective. I wish I could prevail with you, that to the Reading of the Rules, which in themselves are but lifeless Masters, you would constantly add a diligent Practice of the Figures by the Companies; this being the only way to supply the Want of a living Master.

FIG. XXV.





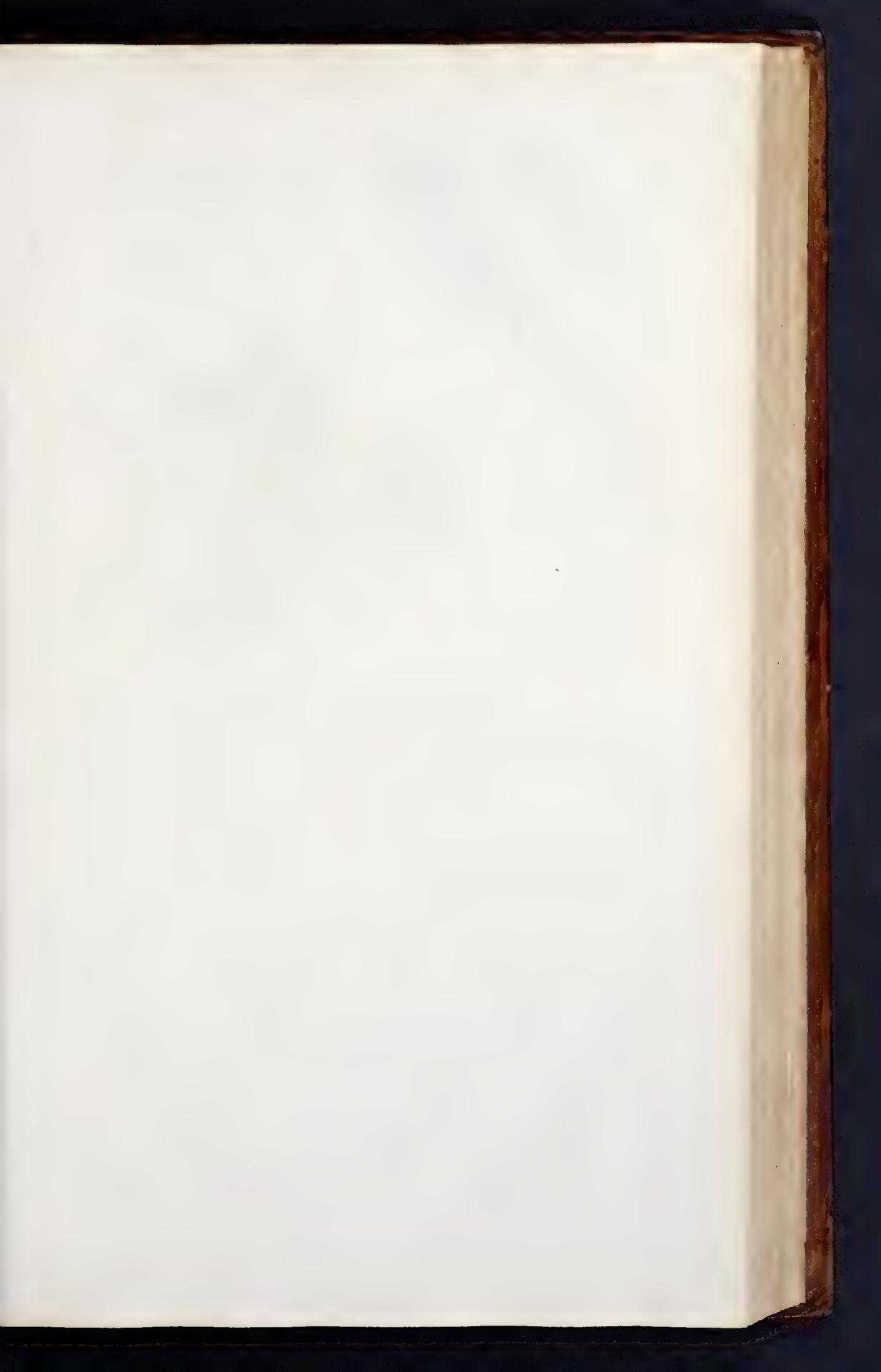
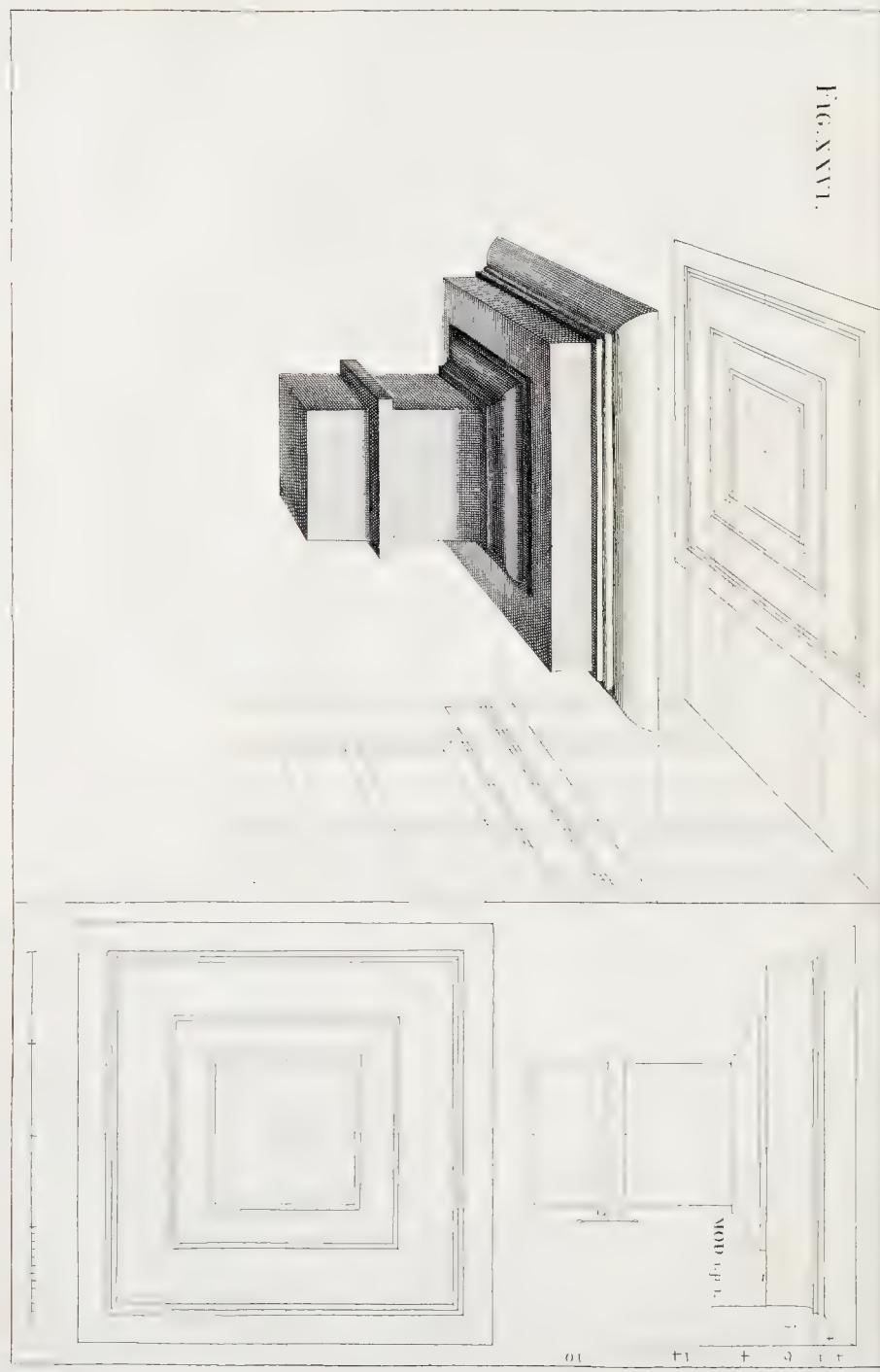


FIG. XXVI.



Twenty-sixth Figure.

The Tuscan Entablature in Perspective.

Figura Vigesima sexta. Deformatio coronicis Etruscae.



Ost capitella sequuntur coronices, quae utpote quadratae, minimam habent arduitatem.

Inter coronices vero, nulla est Etrusca simplicior ac facilior.

Ex elevatione geometricâ, mo-

re solito, formatur vestigium geometricum; ex coque optice contrado eruitur similis elevatio longitudinis. Demin ex elevatione & vestigio componitur coronix nitida. Membris autem duas esse lineas, que hinc inde terminant latitudinem elevacionis optice. Linea que altior est, dat altitudinem anterioris faciei coronicis, alia que est depressior, dat altitudinem faciei posterioris. Et ita erit in posterum.



FTER Capitals we proceed to Entablatures, which

because they are square, are less difficult than the former.

And of all Entablatures, that of the Tuscan

Order is the most simple and easie to be put in execution. From the Geometrical Upright is drawn, as usual, the Geometrical Plan; from the Plan put in Perspective is describ'd the Optick Elevation of the Length; and from both the latter is wrought the clean Entablature requir'd. You may observe, here are two Lines that terminate

the Breadth of the Perspective on one side and the other. The Line which proceeds from the higher Corner of the Visual, gives the Height of the most advanc'd Part; that from the lower determines the Height of the Back-part. And so for the future.

Figura Vigesimalis septima.

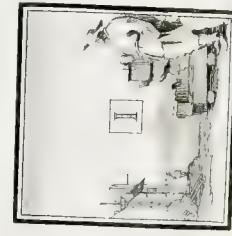
Optica delineatio coronicis Doricae.



N facienda coronice Doricā,
quæ majorē operam poscit,
ob denticulos & triglyphos;
communis regula servanda est.
Si autem libeat coronicem mi-
tidam describere in papyro
separatā ab ejus preparationibus, id profectō
licet, tum in hoc, tum in quoconque alio
schemate.

Twenty-seventh Figure.

The Dorick Entablature in Perspective.



N making the *Dorick* En-
tablature, which has some-
thing more Work in it
than the former, on ac-
count of its Dentels and
Triglyphs; the common
Rule is to be observ'd. And if you would
delineate the finish'd Entablature in a Pa-
per distinct from that of its Preparations,
you are at liberty so to do, either in this
or any other Figure.

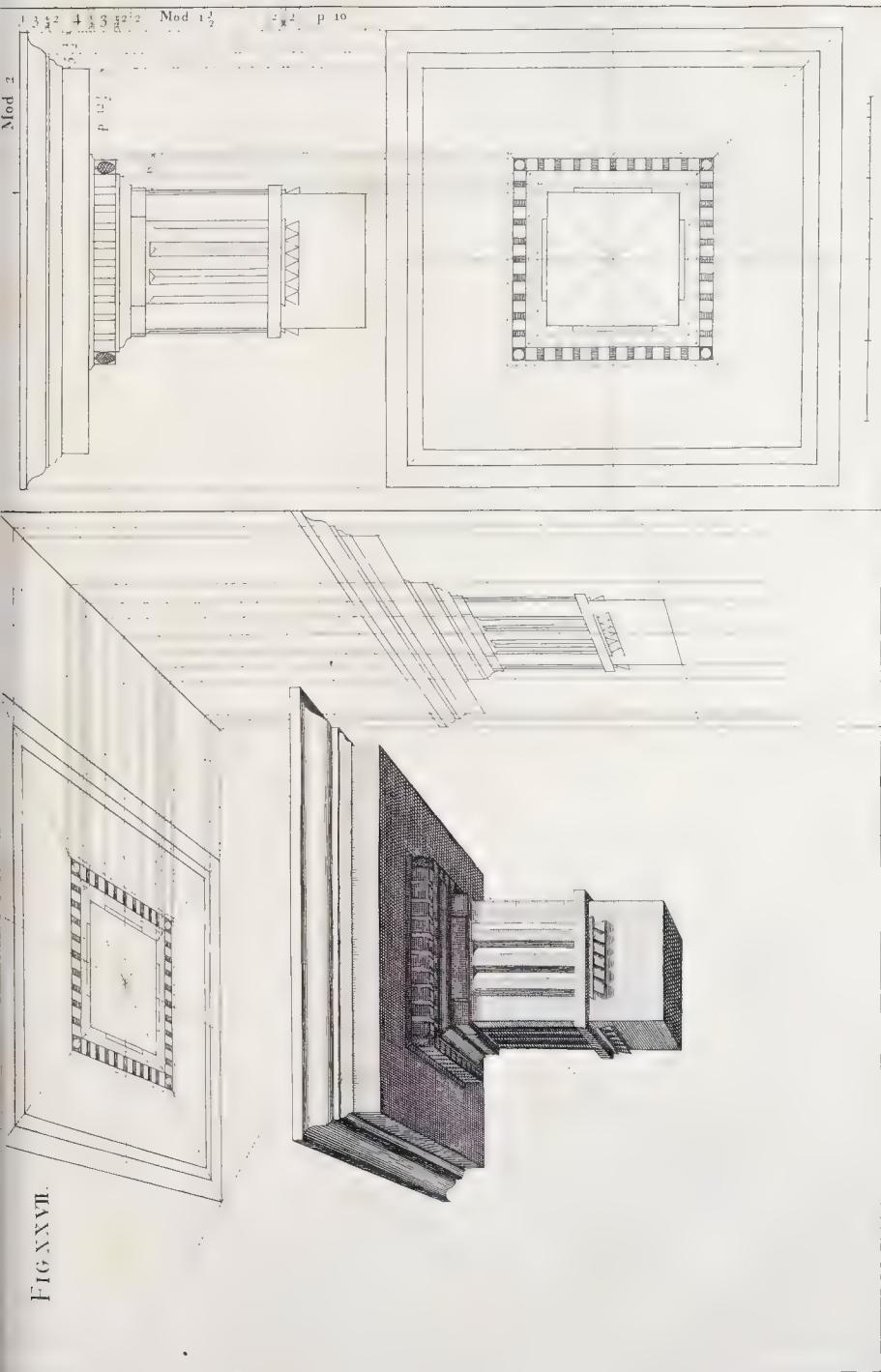


FIG. XVII.



FIG. XXXVIII.

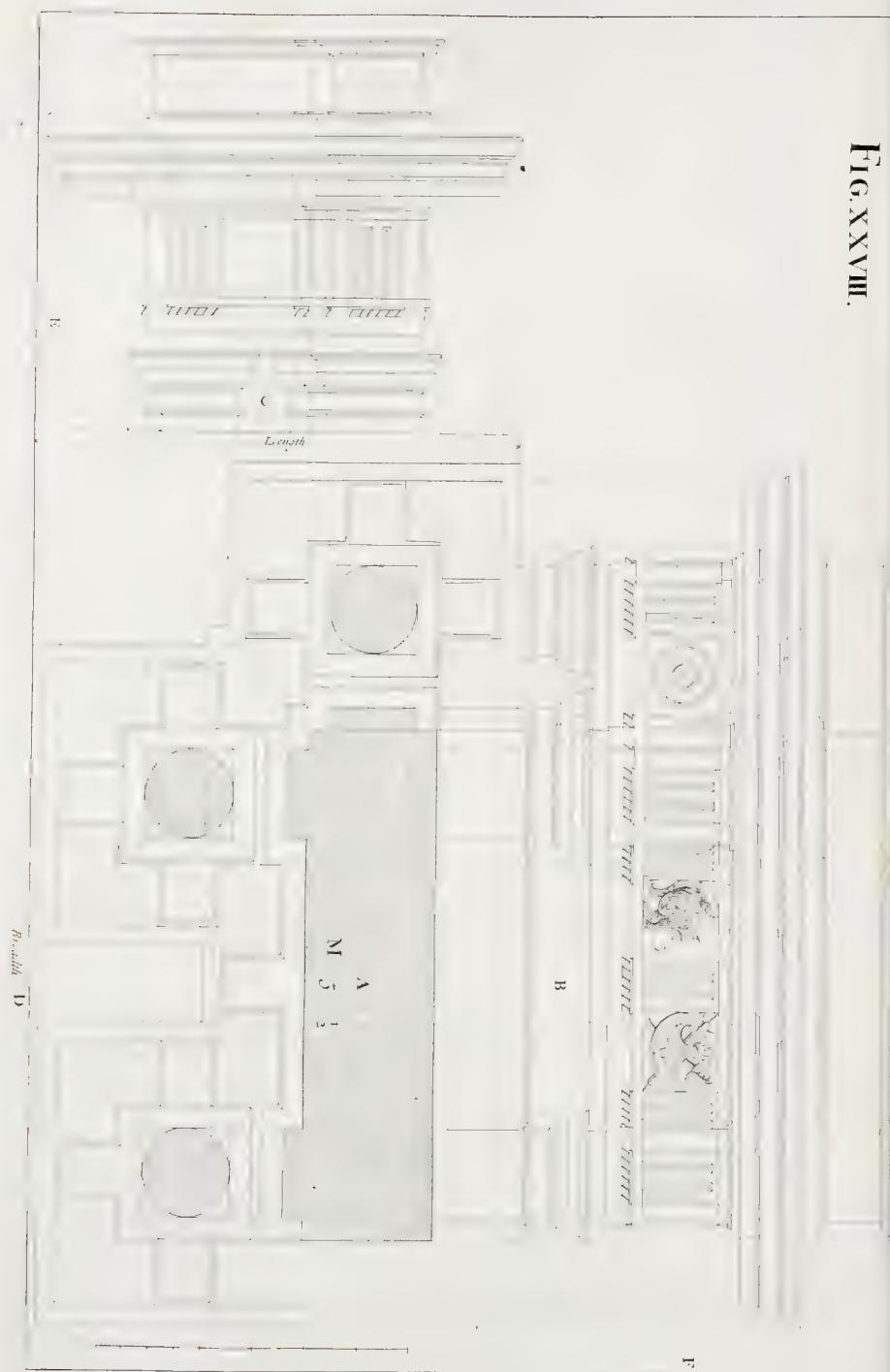
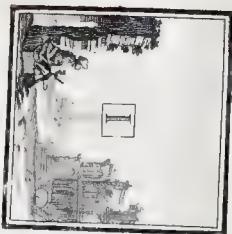


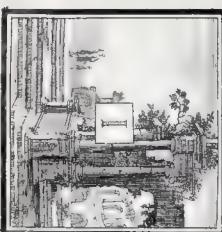
Figura Vigesima octava.

Twenty-eighth Figure,

Preparatory to the following Figure.



N figura vigesima octava, quae continet vestigium & elevations geometricas figuræ vi- gesimæ non, oportuit latus C delineare seorsim à facie B; quia facies exhibet latitudi- nem ædificii, latus vero exhibet longitudinem; atque una non est alteri æqualis. In vestigio geometrico solidus paries est A: circuli referunt summum scapus columnarum. Cetera dant projecturas cornicis, cum suis mutulis.



N this Twenty-eighth Fi- gure, which contains the Plan and Geometrical E- levations of the Twenty- ninth Figure, it was requi- site to delineate the Side C separately from the Front B; because the Front, which signifies the Breadth of the Building, and the Side, which shews its Length, are not equal one to the other. In the Geometrical Plan the solid Wall is A: the Circles express the Nakeds of the Pillars Shafts at top. The rest is the Pro- jection of the Cornice, with its Mutules.

Figure Vigemantona.

Optica projectio edificii Dorici.

A B F S est hanc figuram viginem, optican delineationem et figura, & iuxta ex elevacionibus per gressum in planorum, nonnum, elevationis longitudinem, ex quibus rotula imago nitida adjecta Doricis Doricis, cum paramentibus & capitulis inter columnarum; et quae pellitum, zophorus, & cœnus.

B O est linea frontis; A C est linea planarum in quam, ex linea D & C figura reginatur;

affire, transversa puncta latitudinis & longitudois, datur elationum;

prolongando versus C ipsam lineam planarum, ut sponte, Operibus autem, ut dominus figura reginatur, minima in puncto V distincta rectudo regina,

longitudinis figura reginatur, minima in puncto V distincta rectudo regina,

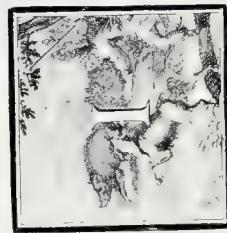
incipit longitudine, & ex punctis latitudinis hinc tendent ad punctum acutum, ubi non ex punctis longitudinis longiora tendunt ad punctum diffractum. Hic vero hæc linea frontis velut ex V O, sunt parallela ad lineam A C, cum extensione ineficaciter, sicut ad complandum delineacionem optican reginatur.

Elevatione C figura reginatur, et optica contribuerat more contracto, transflans in lineam A B. Adversaria linea F vel F, ex quibus fronte videntur ad projectionem acutam; et donante ex linea rectilinea A O perpendiculariter ad lineam A C, ita ut linee parallela ad lineam IBI AC continentur cum illius proximis ad locum A B.

Hic quoque etiam est obversatione illa, ratio minima regna reginatur, tamen flexu, deinde pro parte deplanata, & summa terminant membra obervationis opticae. Ex isto autem hinc: 20 proportiones omnes cunctas & capillorum.

Twenty-ninth Figure.

A Projection of the Dorick Order in Perspective.



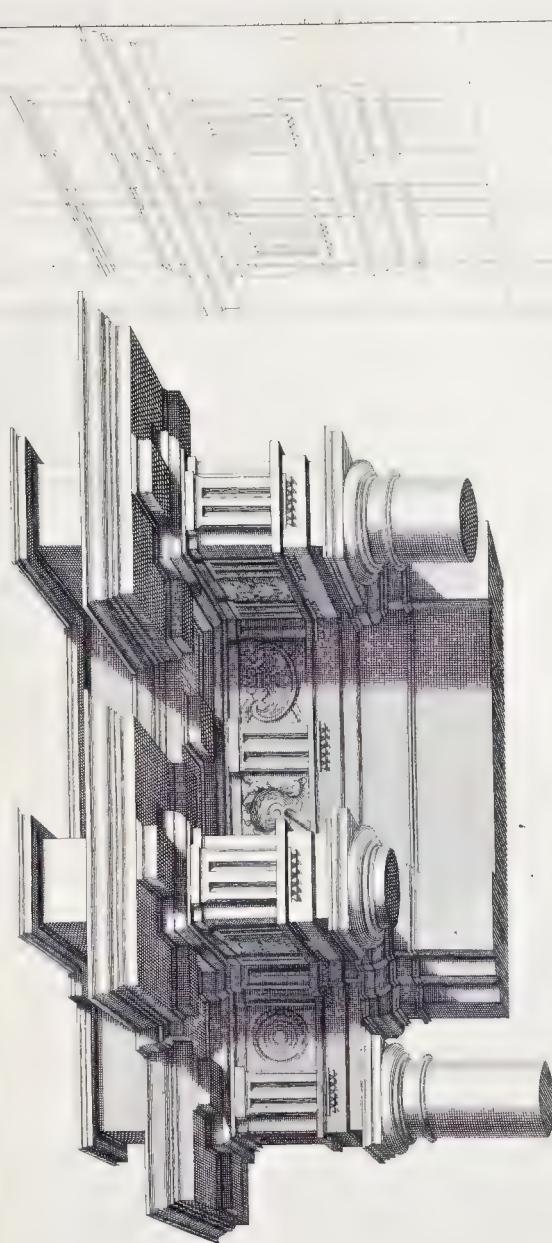
In this Twenty-ninth Figure, you have in Perspective the Plan, and one of the Uprights of the Twenty-eighth Figure: namely, that of the Length, from whence is drawn the first Piece of the Dorick Order, which has the upper Part and Caps of three Pillars, with their Abutments, Friezes, and Cornices.

BO is the Horizontal-Line; AC that of the Plan; into which, from the Lines D and C of the Twenty-eighth Figure, are transferred the Points of Breadth and Length of the two Elevations; first prolonging the Line itself, as much as is needful, through C. The Work is then performed, as was known in the Twenty-eighth Figure: namely, the Divisions of the Breast of the Plan end in the Point V, at which those of Length begin. From the first, Lines are drawn to the Point of Sight; and from the latter, occult Lines are directed to the Point of Distance: And where these cut the Vertical VO, Lines are drawn parallel to AC; with these that are farther off, for completing the Plan in Perspective.

The Elevation C of the Twenty-eighth Figure, is put in Perspective, as usual, by transferring the Divisions of the Line F, or F, into E, or E, in this Plate; from whence drawing Verticals to the Point of Sight, they are intersected by Perpendicularly let fall from the Divisions of VO and by the Parallels to the Ground-line AC, and again continu'd parallel to the Perpendicular AB.

The Observation, mentioned in the Twenty-eighth Figure, is also part and in this Place; That the Lines, which, in the Perspective oblique, run downward, give the Advance and Reces of the several Members of the Works; and from them are taken all the Proportions of the Capitals.

FIG. XXV.



B

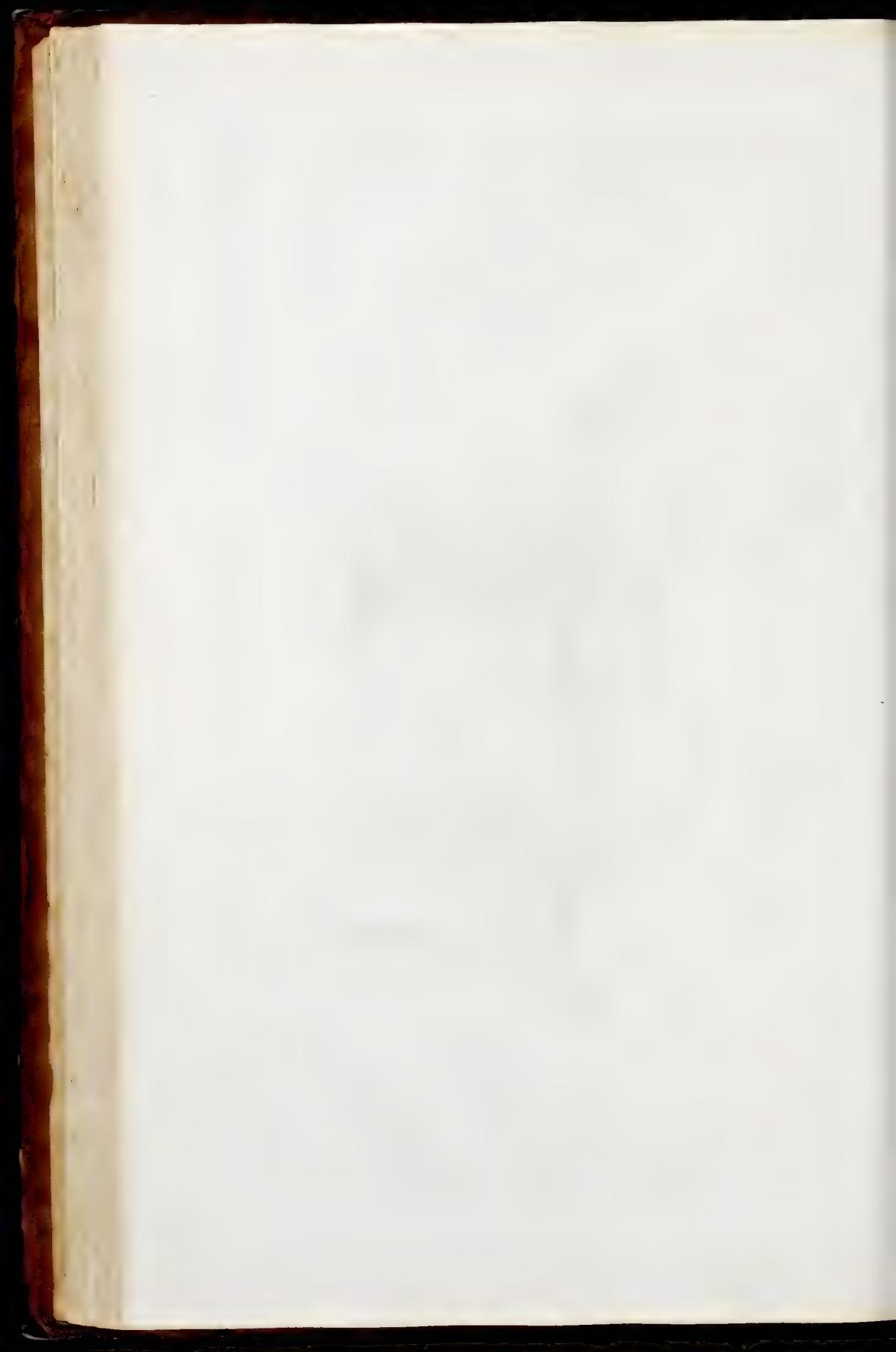
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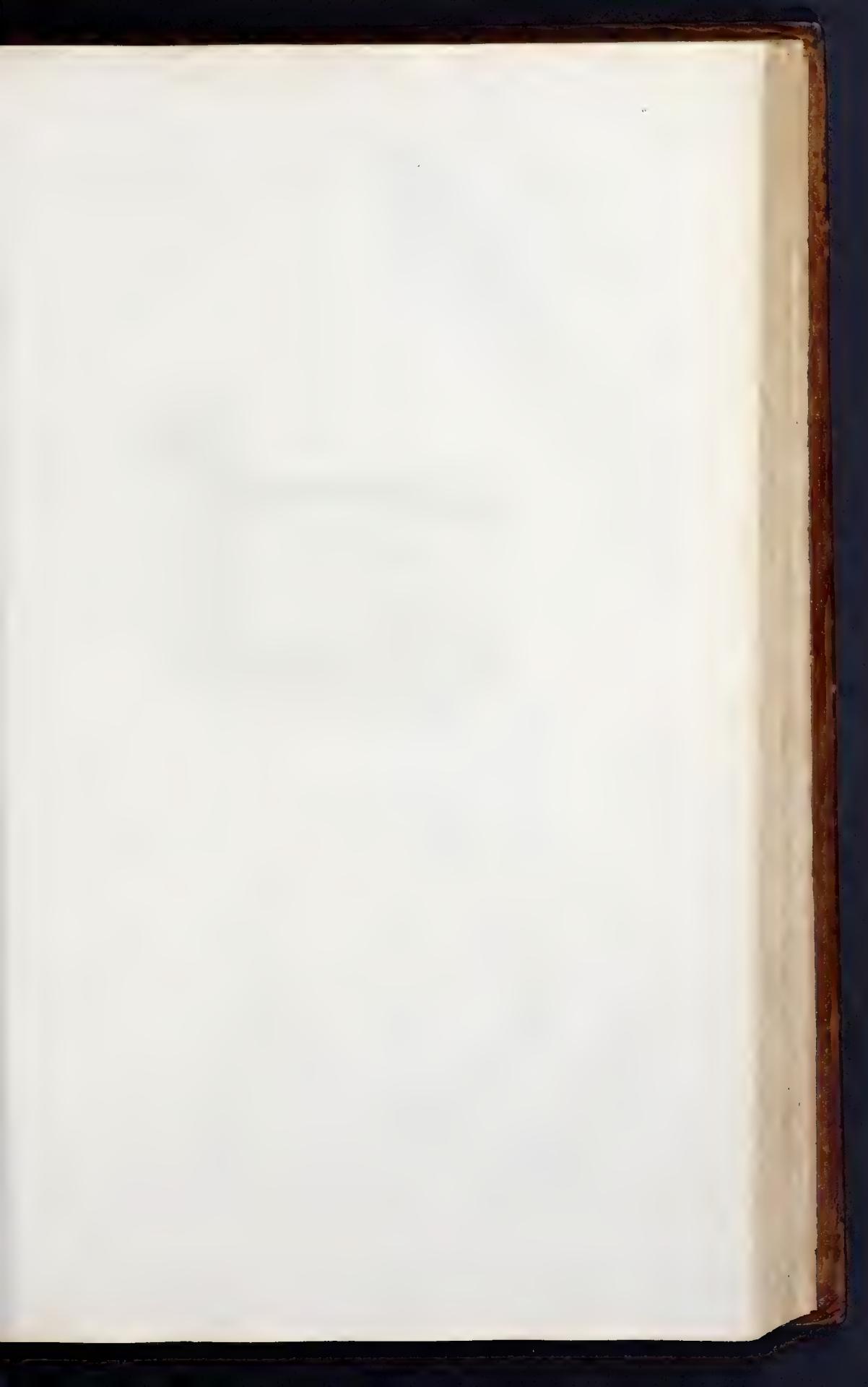
O

A

V

C





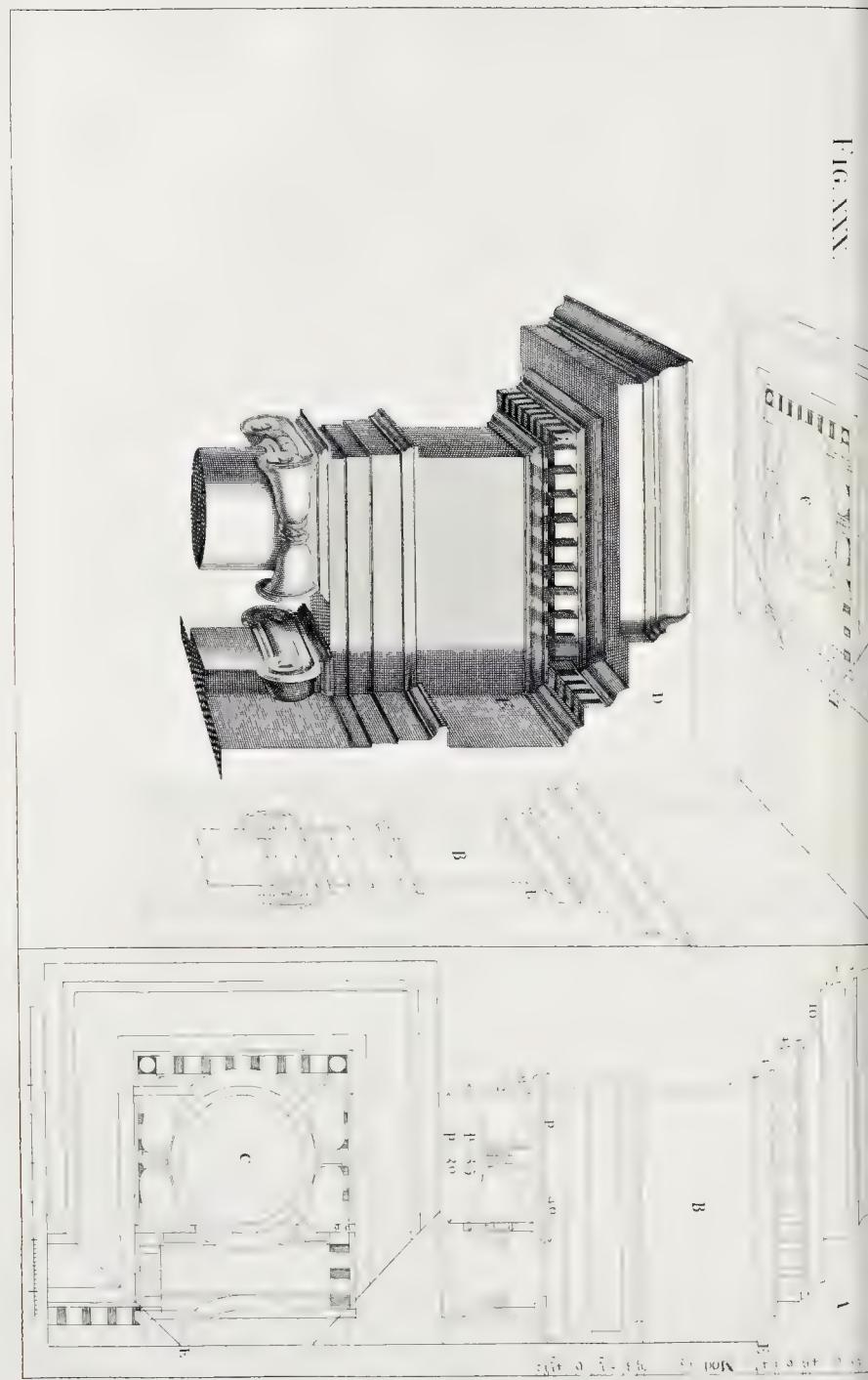


FIGURA Trigefina.

Optica projectio ad finit. Ionici ; ubi de modo iungendam fictum cum vero.



I tibi Pictor quam sis, occasione apparatus qualiter
Ginta horum, vel scipiori Domini, mutare ad
tempus libeat formam arbitrietur atque Ecclesie
jungenda fictum cum vero, ut mis. Iepius contigit
Milanum ac Romam, cum ingenuo spiculorum dele-
flatore & admiratione, paucis instantibus tibi modum
quem servare debas in operando.

Secdo coronis vere, quae, ut suppono, vides debet continua esse cum corone
picta in ictorio, est A ; elevatio geometrica coronis, & reliquorum que deline-
antur sunt, est B ; perspectio geometricum est C. Porro, tunc perspicuum non
elevatione longitudinis optime contrahatur more confecto, ut vides in C & B : ex i-
stae formabatur in telario coronis nitida cum columna & anta ; ipsionque rela-
tum depictionem, normaliter coagumentandum erit vere coronici.

Ut fiat ea pars longitudinis, que coronicem pittam continuare videatur cum
vera, & cuius non potest ex elevatione deformata ; operat sectionem A transforme-
tur, & ex eius non potest ex elevatione deformata ; operat sectionem D, in
D, dicens rectius ex punctis terminatis membrorum sectionis D,
quique dum occurrant lineas latitudines cornicem membrorum. Quod si color-
es in telariam sicut indicantur, argulus in E, quamvis mere deceptio, videlicet
in veris ; & ex aliis, arguli quos telarium ipsam depictionem facit cum di-
versis alio crepidinibus coronis vere, nesciam apprehendere, præterquam in
quadra sive quadrata ; & uno architectum vere cum figura dignoscere non
poterit.



The Thirtieth Figure.

An Ionick Work in Perspective ; with the Manner of reconciling the fictitious
to the solid Architecture.

E, being a Painter, you were required, against
the Solemnity of the Holy-Week, to alter for
a while the Architecture of some Altar-piece,
by joining Painting to the real Work ; as I
have often done, both at Rome and Milan, to
the great Satisfaction and Surprise of the Be-
holders : I shall briefly shew the Method to
be observ'd in performing the same.

The Direction of the solid Cornice, which I here suppose shall appear
continu'd in that painted on the Canvass, is A ; the Geometrical Elevation
of the Cornice, and other Parts to be drawn, is B ; the Geometrical Plan
is C. The Plan and Elevation of the Length are put in Perspective after
the usual manner, in C and B ; from th'o the finished Cornice, with the
Pillar and Pilaster, are delineated on the Canvass ; and the Picture is then
conjoin'd, at right Angles, to the true Cornice.

For adjusting the Members so, that the painted Cornice may seem to
be the real one continu'd, (which can't be done by the Perspective Up-
right) you must transfer the Section A to D ; and from the terminating
points of the several Members thereof, draw visual Lines, till they meet
those of their respective Members in the Perspective. And if the Colours
are laid by a skilful Hand, the Angle at E, tho' painted only, will appear
as real ; and on the contrary, the Angles which the Members of the pain-
ted Cornice make with the different Projections of those of the true, will
never be discern'd, unless in the very uppermost Filler ; but the Conjun-
ction of the real with the painted Architecture, will be altogether imper-
ceptible.

Figura Trigesimaprima.

Optica projectio coronicis Corinthiae, cum capitello & summitate columnæ.



N hoc schemate linea plani est CIE, horizontis est DFO; punctum oculi est O, distans est D. Elevatio geometrica capitelli Corinthii cum sua cornice est A, quoniam divisiones centurias in perpendiculis CD. Verticulum geometricum B habet longitudinem aequalem latitudini: optime autem contrahitur methodo confusa. Nimirum, translatis divisionibus latitudinis & longitudinis in lineam plani CIE; ex punctis latitudinis sunt videntur ad punctum oculi; ex punctis vero longitudinis sunt occultae ad punctum divisionis: hoc modo habes quicquid necessarium est ad contractionem opticam vegetissim. Nam linea longitudinum sunt paries visualium, ut patet in GN, HL: linea latitudinum, parallela ad lineam plani sunt ex punctis in quibus linea tenuitudo ad punctum diffinientem visualium HO, ut videt in NL. Porro, si tantummodo prolongaretur horizontalis DO, ita ut habeat duo puncta diffinientia remota aquiliter ab O, medietas diagonalis, que sunt in quadrato majori GNLH optime deformata, & in quadratis eius minoribus, tendent ad unum punctum diffinientem; altera medietas ad aliud punctum diffinientem.

Velutatio longitudinis optime contrahitur facilius parallelis ad CE, que ubi perpendiculariter ad punctum IO, continuatur cum aliis parallelis ad IK. Præterea, translatis in lineam IK, divisionibus lineæ perpendicularis CD, ex punctis divisionum sunt videntur ad punctum oculi, ac divariant angularia membrorum ipsius elevations, cuius latitudines sunt pars visualium, altitudines vero sunt partes linearum parallelarum ad IK. Divisum ex vertigine & ex elevatione longitudinalis, formatur coronis nitida cum capitello. Ut autem facilis delinearuntur matki, primum sunt quadrata formis, ut in M; dividere congerunt flexus in angulos inducuntur.

The Thirty-first Figure.

The Optick Projection of a Corinthian Cornice, with the Capital and Part of the Column.



In this Figure the Line of the Plan is CIE, that of the Horizon is DFO; the Point of Sight is O, the Point of Distance D; the Geometrical Elevation of the Corinthian Capital, with its Embellishment, is A; whole Divisions are seen in the Perpendicular CD. The Length and Breadth of the Geometrical Plan B are equal, and the Plan is put into Perspective, after the usual Method; to wit, by transferring the Divisions of Breadth and Length into the Line CIE from the Points of Breadth drawing Visuals to the Point of Sight; and from those of Length occult Lines to the Point of Distance: by which Intersections you have all that is necessary for putting the Plan into Perspective. For the Lines of Length are Parts of visual Rays, as is manifest by GN, HL; and the Lines of Breadth are made Parallel to the Ground-line, from the Inclinations before-mentioned, as is seen in NL. Moreover, if the Horizontal-line DO were so prolonged, as to receive another Point of Distance equidistant from O, half the diagonal Lines of the great Square GNLH, and of the lesser Squares contained therein, would tend to one Point or Distance, and the other half to the other.

The Elevation of the Length is put in Perspective, by continuing the Parallels to CE, till they cut the Visual IO; and from thence dropping Lines parallel to IK. Then transferring into IK the Divisions of the Perpendicular CD, from them make visual Lines to the Point of Sight, and the several Members of the Upright; whose Breadths are Parts of Visuals, and their Heights Parts of Perpendiculars, or Lines parallel to IK. Lastly, from the Plan and Elevation of the Length, you delineate the finished Cornice and Capital: But that you may more easily draw the Millions, first make them in a square Form, as in M; and that will very much assist you to give the Scroll of such a more agreeable Turn.

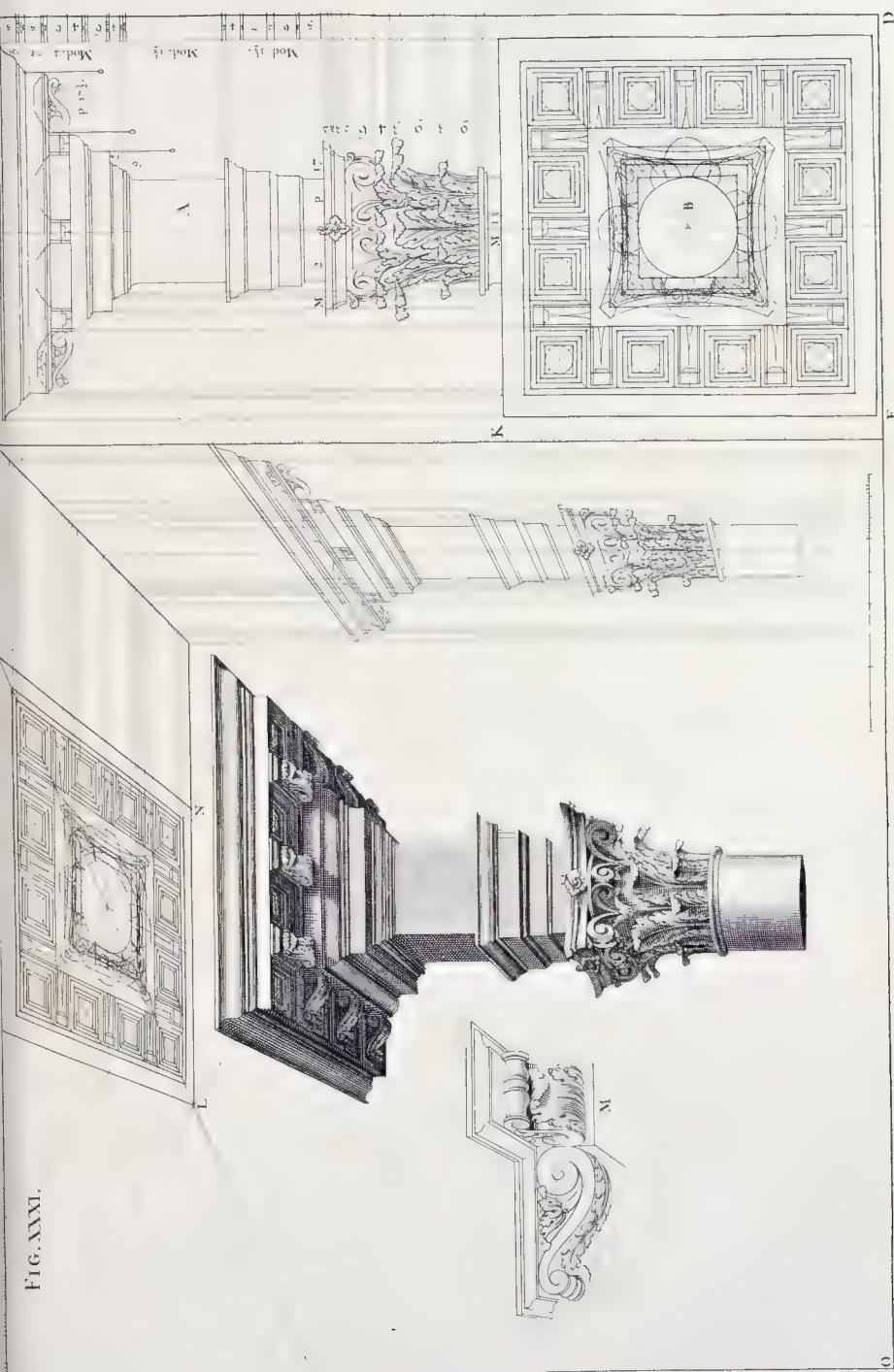


FIG. XXXI.

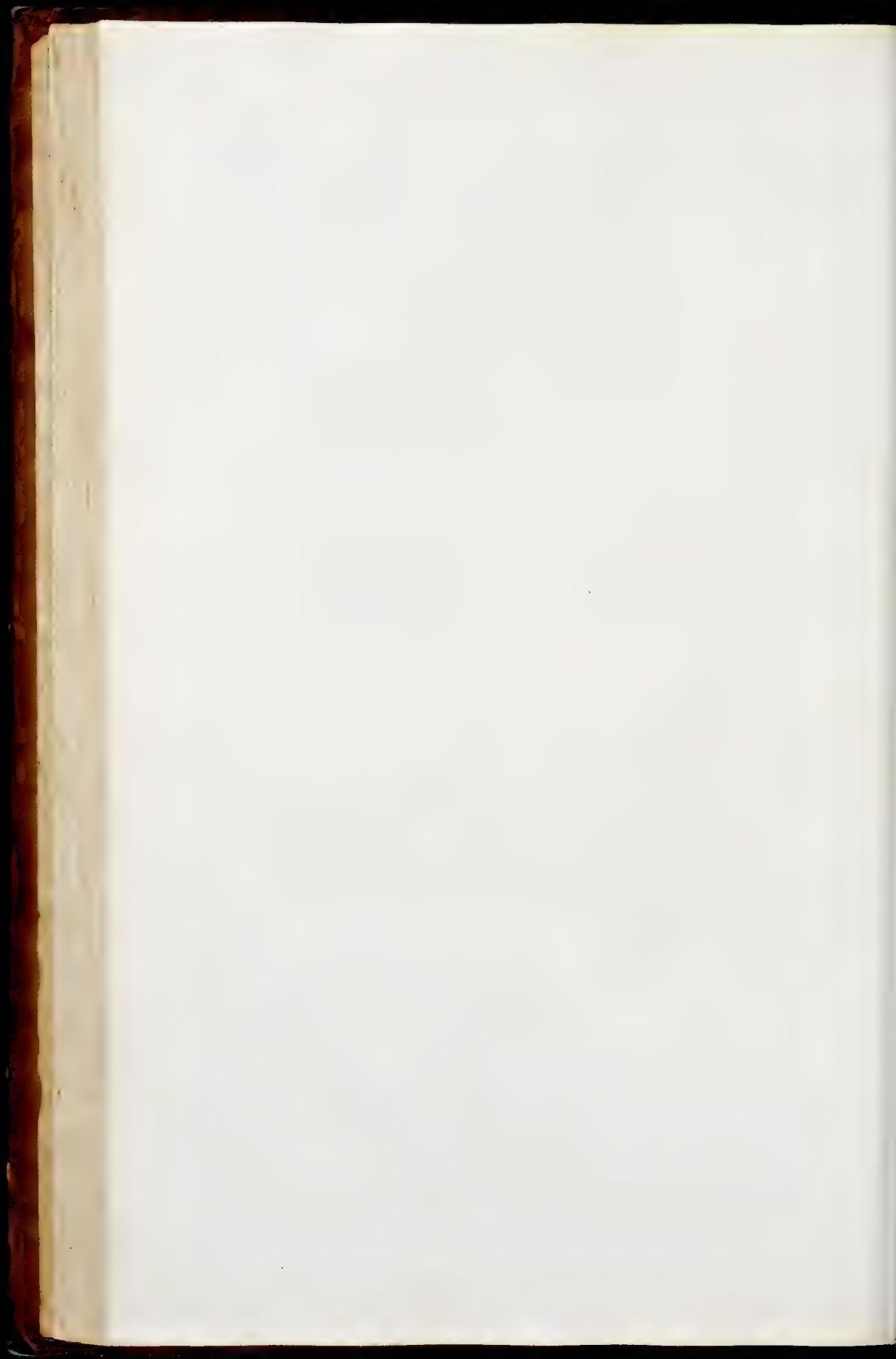




FIG. XXXII.

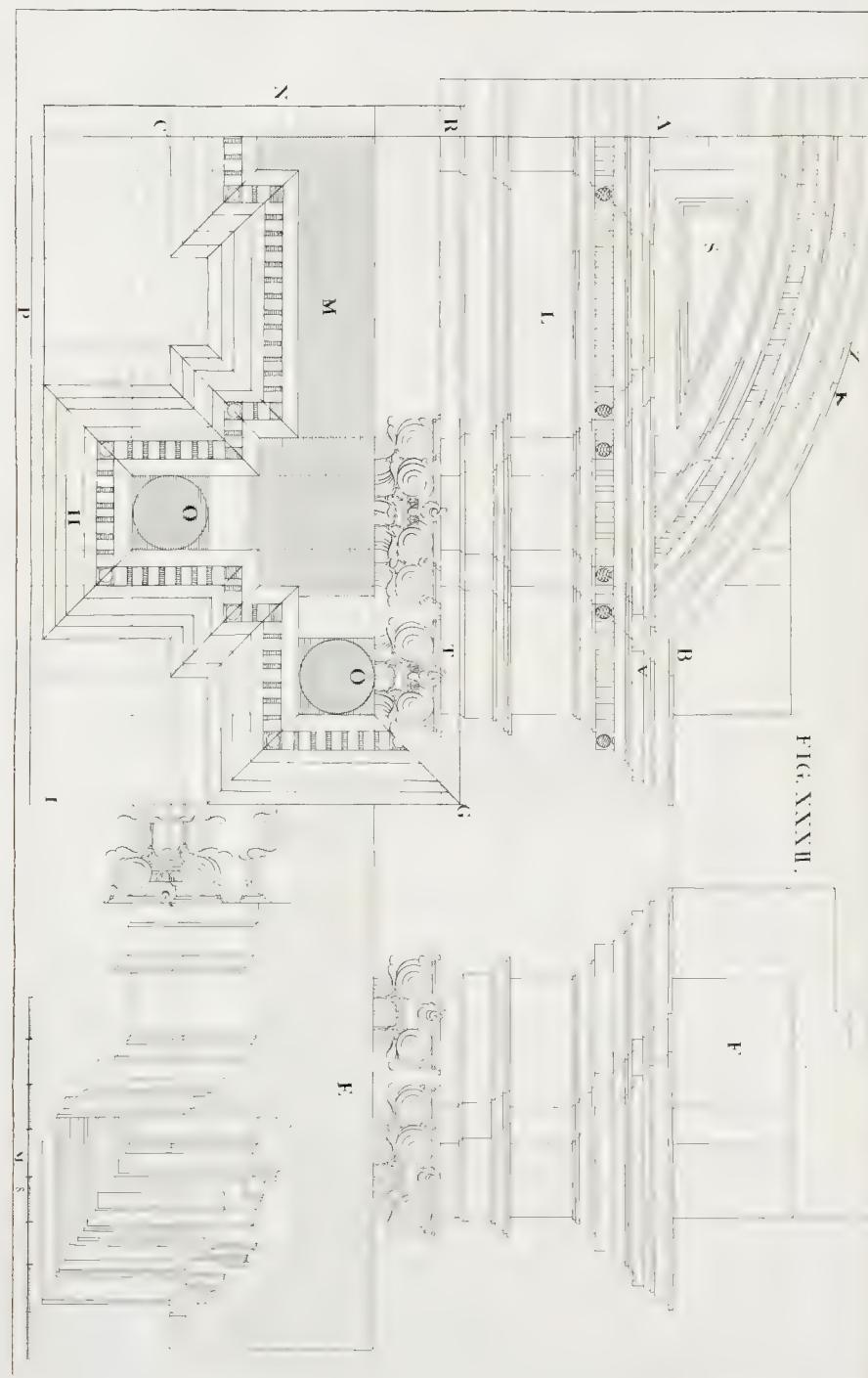
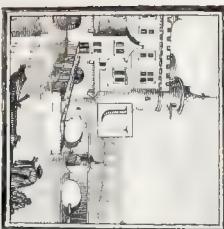


Figura Trigesima secunda.

Delineatio geometrica coronicis,
Ordinis Compositi.



T hoc schema grandius ac distinctius effet, eius
medietatem dimittat sylcpi delineandum. PN
est vestigium geometricum. M est solidus paries.
OO platia columnarum. In H sunt crepidines
coronicas. Elevatio geometrica latitudinis adiecti
confat epiphilo T, zophoro L, & corona V, su-
pra quam eminet vestigium S.

Iam sit inveniatur centrum arcum, distante AV fiat equalis distans A C.
Postique una cibide circini in C, alia extendatur usque ad V; ita fierent ar-
cu, quorum ultimus est BD, omnesque sunt concentrici. Elevatio F ostendit
longitudinem adiecti ex parte GI; elevatio E ostendit longitudinem ipsius ex
parte DR.

Thirty-second Figure.

The Geometrical Design of a Cornice, of the
Composite Order.



HAT this Figure might be larger and more di-
stinct, I have here describ'd only the Half of it.
PN is the Geometrical Plan. M is the Solid
Wall. OO are the Places of the Columns.
H shews the Projections of the Cornice. The
Geometrical Elevation of the Breadth of the
Frontispiece, consists of the Architrave T, the
Frieze L, and the Cornice V, over which is
rais'd the Pediment S.

For finding the Center of the arch'd Lines of the Pediment, make the
Distance AC equal to that of AV; and placing one Point of the Com-
pas's in C, extend the other to V, and describe the Arch. The other
Arches, of which BD is the utmost, have all the same Center. The E-
levation F shews the Length of the Work on the Side GI. The Upright
E shews the Length of the Fane on the Front DR.

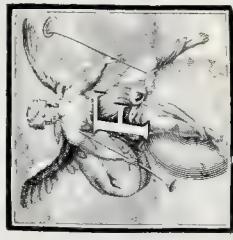
Figura Trigeminaria.

Deformatio coronis Composita.

The Thirty-third Figure.

A Composite Cornice in Perspective.

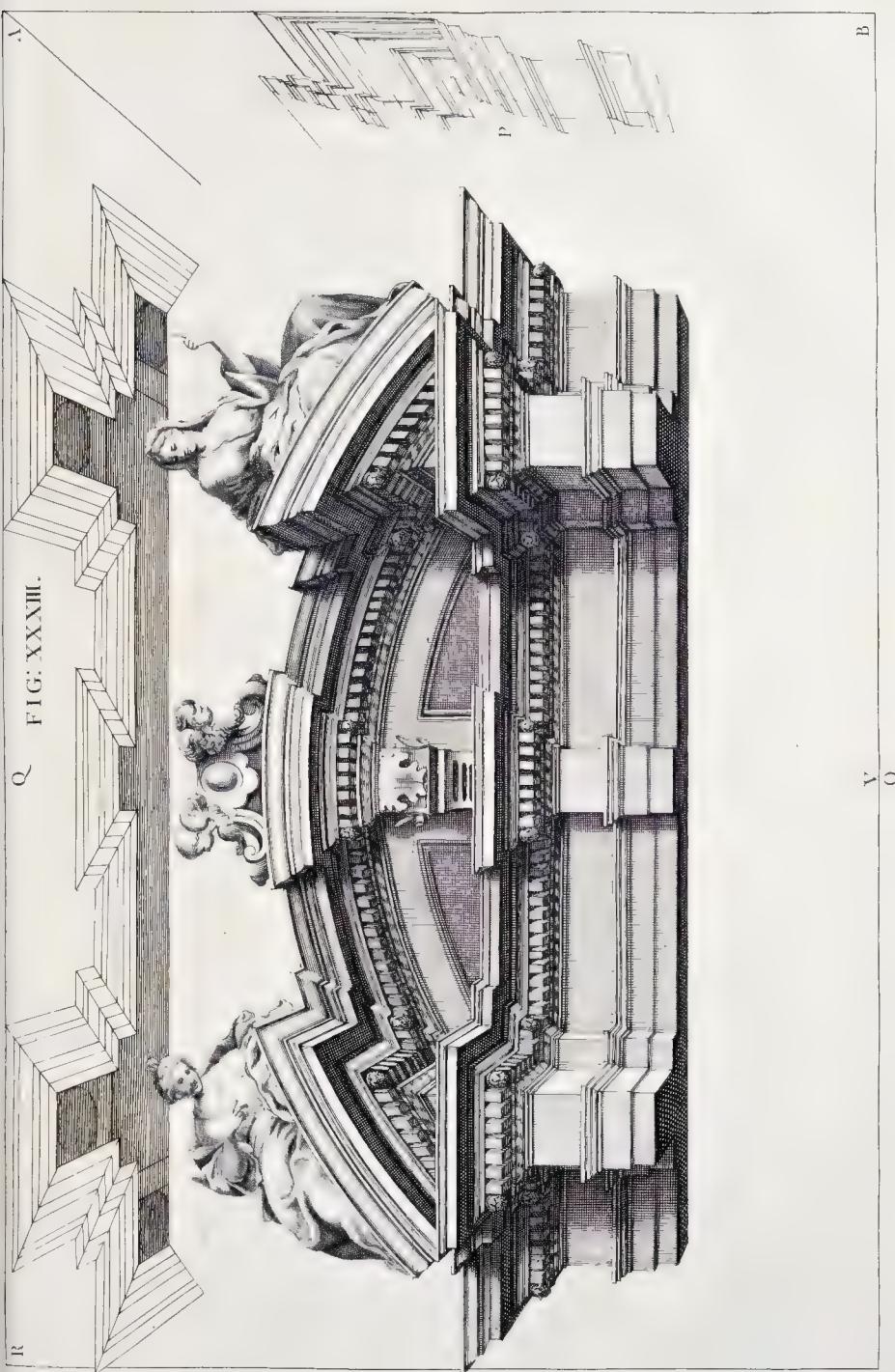
I C U R A hoc trigeminaria minus ardua tibi videbitur, si ex ea delinquandam primum scutipias medicamentum que respondat refugio P N & elevacioni B R figure trigeminae scande; rejecto in altum fiftigio, fiftigiam cetera compleveris. Linia B V est horizontalis. Punctum oculi est V, punctum diffinante remotione est ab V spatio B V, additis modulis quatuordecim cum dimidio. Linea plani est A R, in quam ex Q, versus A transversa latitudo P; ex Q, versus R transversa longitudi N, cum omnibus eorum divisionibus; ut ex planis latitudinis fiant vijades ad punctum oculi; & ex punctis longitudinali fiant occulte ad punctum diffinante. Ex his basi quicquid necessarium est ad projectionem opticam refugii, ut ostendimus figuram trigeminam. Eademque methodo, quam ibi servavimus, contrahes elevationem P longitudinalis coronis: ac tum ex illa, tum ex refugio, eructus coroni initia more conseruo.



Ut delineatur fiftigium, transversale sunt in lineam A B divisiones infra ex elevatione F figure trigeminae scande, ac dicendae vijades ad punctum occulti, additis lineis terminatis uniuscujusque membra, que accipientur ex refugio Q, opice deformato. Centrum O arcum fiftigii midili remont est à funditate coronis, mediate diffinante, quam habent ingres quadræ cui fiftigium ipsum incabit. Ac proinde, si accipias ex elevatione P diversas altitudines membrorum fiftigii; latitudines vero accipias ex refugio Q; opus tuum feliciter abfolyes.

HIS Thirty-third Figure will be found the less difficult, if you first attempt that Half which answers to PN in the Plan, and BR in the Upright of the Thirty-second Figure; leaving the Pedament, till all the rest be finished. The Line BV is the Horizontal. V is the Point of Sight; the Point of Distance is fourteen Modules and a half without the Point B, more than the Interval BV. The Line of the Plan is AR, in which from Q toward A you have the Divisions of Breadth of the foregoing Plan P; and from Q to R those of the Length thereof N; From the former, Vertues are drawn to the Point of Sight; and from the latter, occult Lines to the Point of Distance. And from these you have all that's necessary for putting the Plan in Perspective; as was shewn in the Thirty-fifth Figure. By the Method there observ'd, you may also describe the Perspective-Elevation of the Length P; and from this, and the Plan, delineate the finished Cornice after the usual Manner.

For making the Pedament, the Divisions of the Elevation F in the Thirty-second Figure, must be transfer'd into the Line AB, and Vertues drawn from them to the Point of Sight; giving to each Member its proper Our-line and Contour, as may be taken from the Perspective-Plan Q. The Center O of the Arches in the finished Pedament, is plac'd below the upper Member of the Cornice, as much as half the Extent of the upper Fillet from whence the Pedament springs. And by taking the several Heights of the Members thereof, from the Elevation P; and the Breadths from the Plan Q; you will successfully finish and complete your Work.



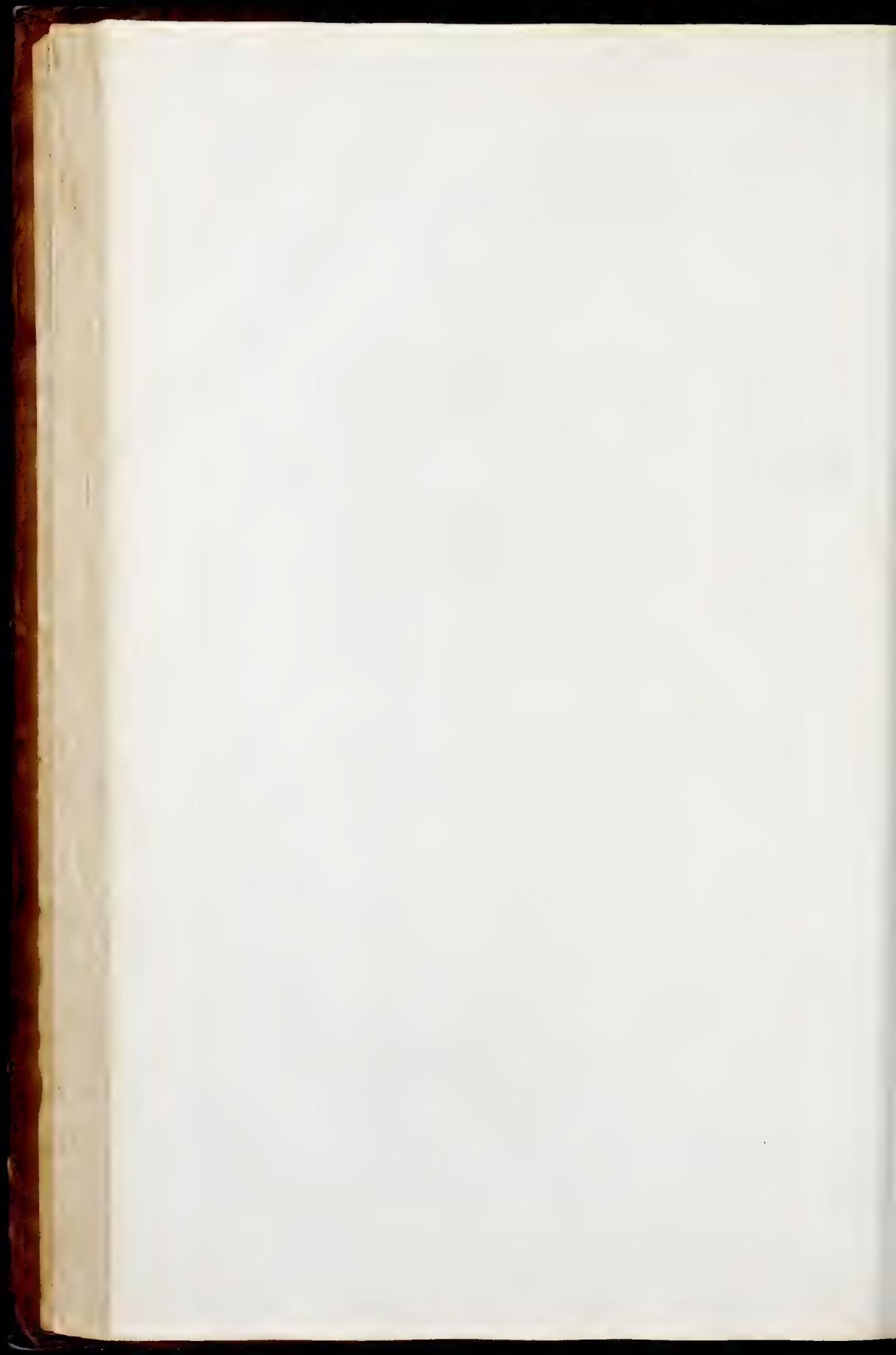




FIG. XXXIV.

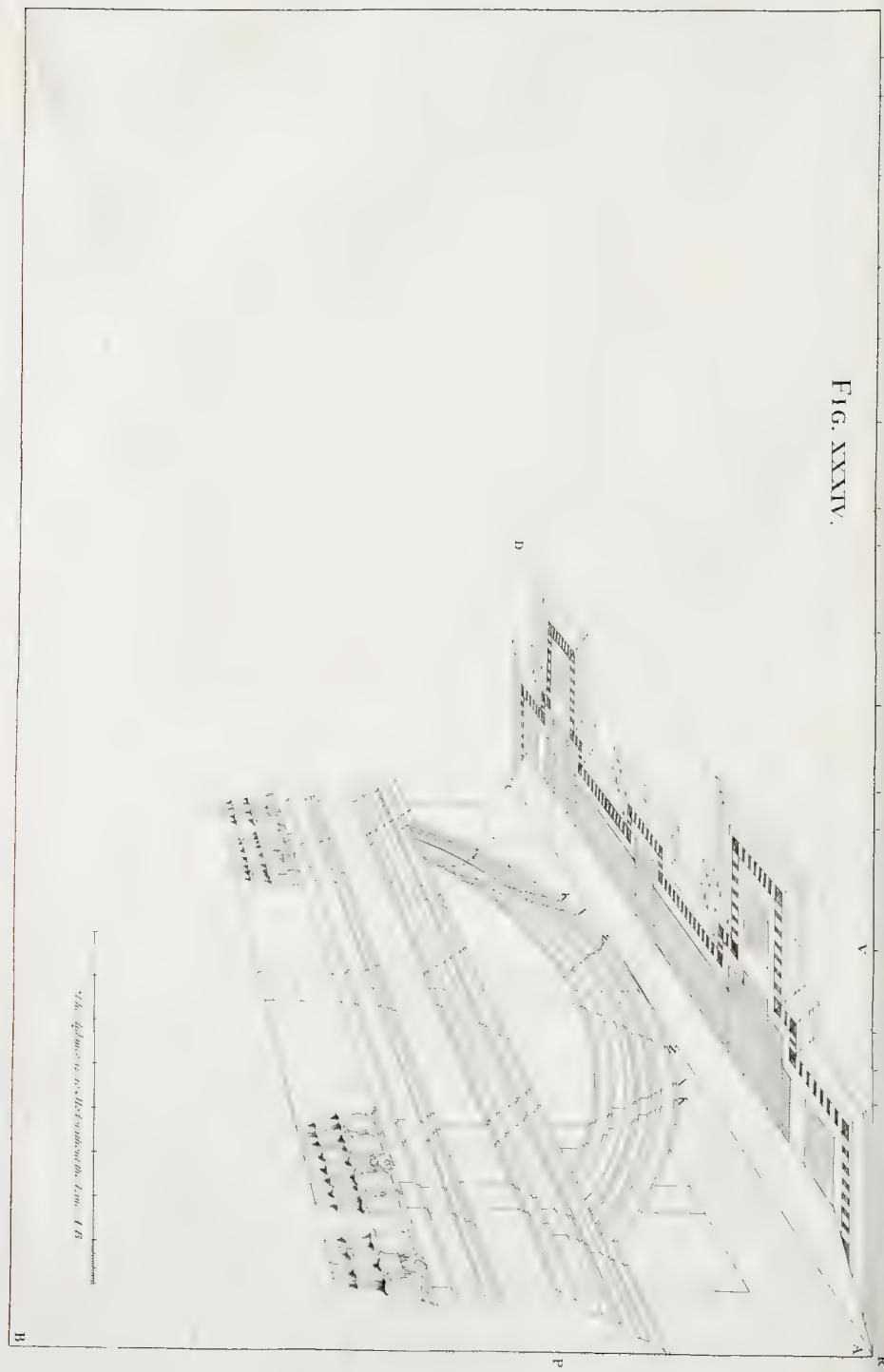
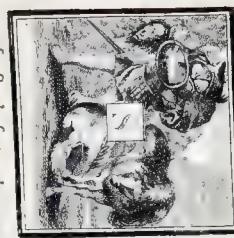


Figura Trigesimaquarta.

The Thirty-fourth Figure,

Preparatio ad figuram trigesimam quintam.



In placuerit conferre figuram trigesimam quinta cum prefaci figura trigesimaqua, de genere vestigium & elevationem cornicis Compositae alio modo hic deformari, micando & latuendo in longitudinem in latitudinem, & latitudinem in longitudinem. Propterea hac figura tantum hanc occupat, ut cum seorsim à cornice nitida delovere oportuerit.

Divisions latitudinis in vestigio recipiunt ex V extensis, & sunt eadem cum divisionibus recte I G figura trigesimam secunda. Divisiones longitudinis incipiunt ex V fronte vigilantes ad punctum oculi; ex divisionibus latitudinis fronte recte ad punctum divisionis; cum reliquis que necessaria sunt ad complectionem vestigium AVDC.

Elevatio longitudinis cornicis & saffigii, opere contrahitur per lineas parallelas ad lineam planam A S; que nisi proceruerint ad vultum A C, continuantur cum aliis parallellis ad perpendicularium P, ut diximus figuram trigesimam prima. In ieiuno perpendicularium P transversatur ex figura trigesimam secunda divisiones recte DR; & infra aliudinas, quas puncta K X Z habent ipsa rectam VA; fronte vigilantes ad punctum oculi; sectiones autem vultuum cum parallelis ad perpendicularium P, dabo non sex puncta sime saffigii, respondentia punctis K X Z duplicatis figura trigesimam secunda; tuncque ductus formandus est saffigium arcus. Edem artificio fronte recte omnes.

Facilius determinabitur cornice, cuius maximum partem occupant linee vigilantes ad punctum oculi: perinde membris omnis, excepta summa communis sum corona & saffigium. Atque puncta similia in lineis terminatibus membrorum singularium, ex quibus determinatur crepidante & nigris figure nitide, sunt parallela ad perpendicularium P.



If you please to compare the Thirty-third Figure with this Thirty-fourth Figure, you will perceive the Plan and Elevation of this Composite Cornice to be delineated differently from that; to wit, by making the Length of that the Breadth of this, and the Breadth of the Length of this: On which account, this Figure takes up to much Room, that there was a necessity of drawing the finisht Cornice on a separate Paper.

The Divisions of Breadth in the Plan begin from V toward R; and are the same with those of the Line I G in the Thirty-second Figure. The Divisions of Length are set from V toward S; and are the same with those of the Line I P in the Thirty-second Figure; which being the Half, is here doubled. From the Divisions of Breadth, Lines are drawn to the Point of Sight; and from those of the Length, Lines to the Point of Distance; with the further Requisites for completing the Plan AVDC in Perspective.

The Upright of the Length of the Cornice and Pediment, is made by producing Parallel to the Ground-line A S; till they intersect the Virtual A C; and thence continuing Lines parallel to the Perpendicular P as was directed in the Thirty-first Figure. Into the same Perpendicular P are transferred the Divisions of the Line D R in the Thirty-second Figure; and also the Heights which the Points K X Z have above VA in the same Figure. From all which, Vigilantes are drawn to the Point of Sight; which being intersected by the Perpendiculars, give six Points on the *Cima* of the Pediment,

which answer to the said Points K X Z of the Thirty-second Figure, double'd: By these the outward Arch is formed. And by the same Rule, you find Points for all the others.

You will more easily draw the Cornice, the greatest Part of it consisting of virtual Lines to the Point of Sight: Moreover, all the Members, except the upper *Cima*, are common both to the Cornice of the Entablature, and to the Pediment; so that the corresponding Points, in the Out-lines of their several Members, from whence the Breaks and Concours of the finisht Piece are taken, are found in the same Parallels to the Perpendicular P.

Figura Trigesimaquinta.

Deformatio coronicis Compositæ, ad latus inspectæ.



RETIFICIUM nitide coronicis, ex vestigio & elevatione figuræ trigeminaquarte erende, non differt ab eo quod sepe tradidum est. Itaque supposito, quod linea plani & horizontis, ac puncta oculi ac distantie, habeant in hoc schemate situ omnino eundem, quem habent in precedenti ; operarum circiorum, inventetur distantia, quas anguli necessarii ad integrum delineationem coronicis, habent à linea plani, & à linea normali ad ipsam lineam plani. Nam ducento lineas vissim, aliisque lineas parallelas ad ipsum perpendicularium, cum terminis & flexibus qui convenient figuris membris, complebitur delineatio.

In vestigio vissim sunt penitus occultæ : puncta autem similia H & L, ex quibus figuram incipit introsum ficti, incident in unam eandemque vissim. Id ipsum dico de aliis punctis similibus. Nam linee rectæ omnes, que in figura trigemina sunt parallelae ad lineam plani, in figuris trigeminaquarta & trigesimaquinta sunt partes lineorum vissimatum.

The Thirty-fifth Figure.

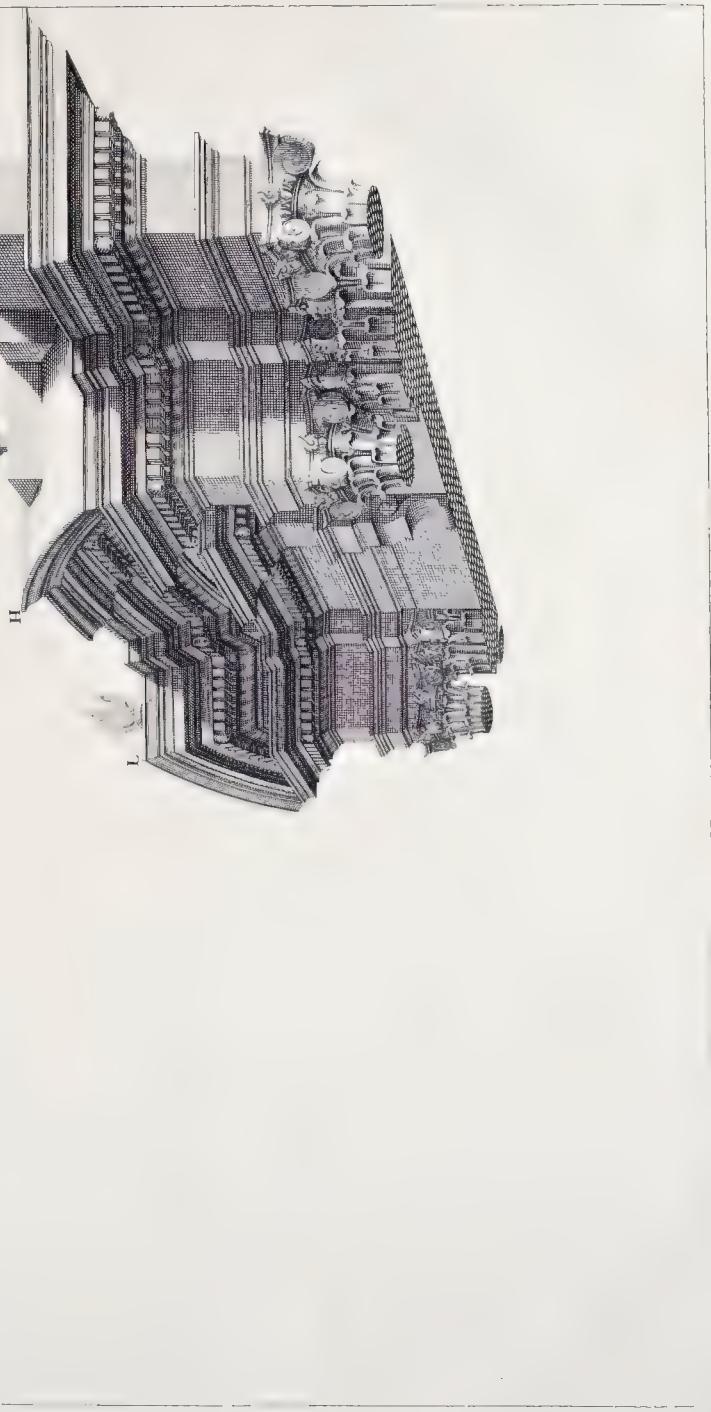
A Side-View of the Composite Cornice, in Perspective.



HE Manner of drawing this finisht Cornice, from the preceding Plan and Elevation, is the same with that so often shewn you. Admitting therefore, that the Lines of the Plan and Horizon, and the Points of Sight and Distance, have the very same Position in this, that they had in the preceding Scheme ; all the Angles necessary for delineating the entire Cornice, are readily found by the help of two pair of Compasses ; taking their Distances one way from the Ground-line ; and the other way from a Line perpendicular to the same : Then drawing the visual and perpendicular Lines, and keeping the Place and Contour of the several Mouldings, you complete your Design.

In the Pedament the visual Lines are wholly occult ; and the Points H and L, where the Pedament begins to break back, being of like Height, are found in one and the same Visual : And the same may be said of all Points that are of equal Height from the Plan ; for all the right Lines, which in the Thirty-third Figure are Parallels to the Ground-line, in the Thirty-fourth and Thirty-fifth Figures are Parts of the visual Lines,

FIG. XXXV.



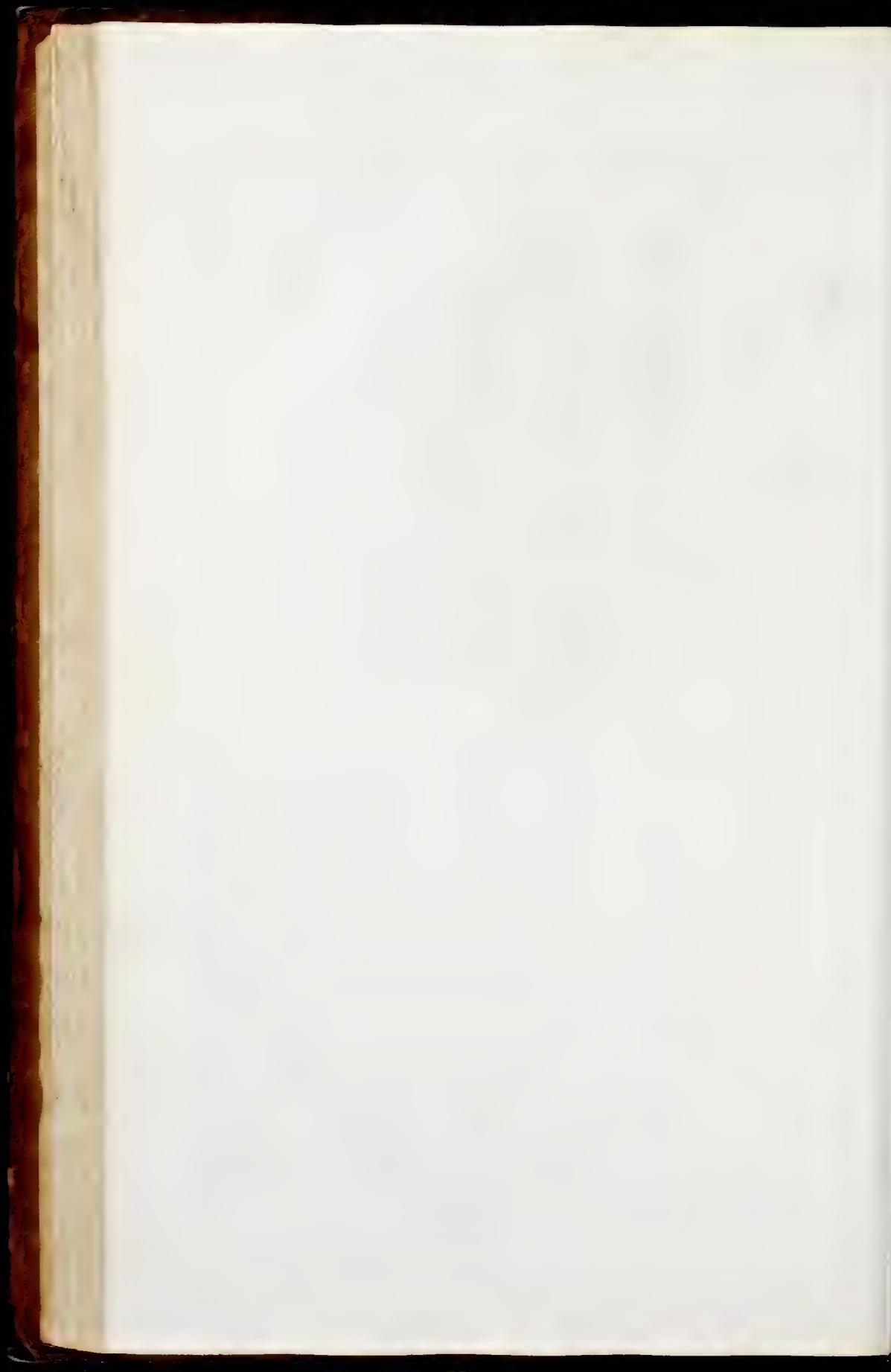
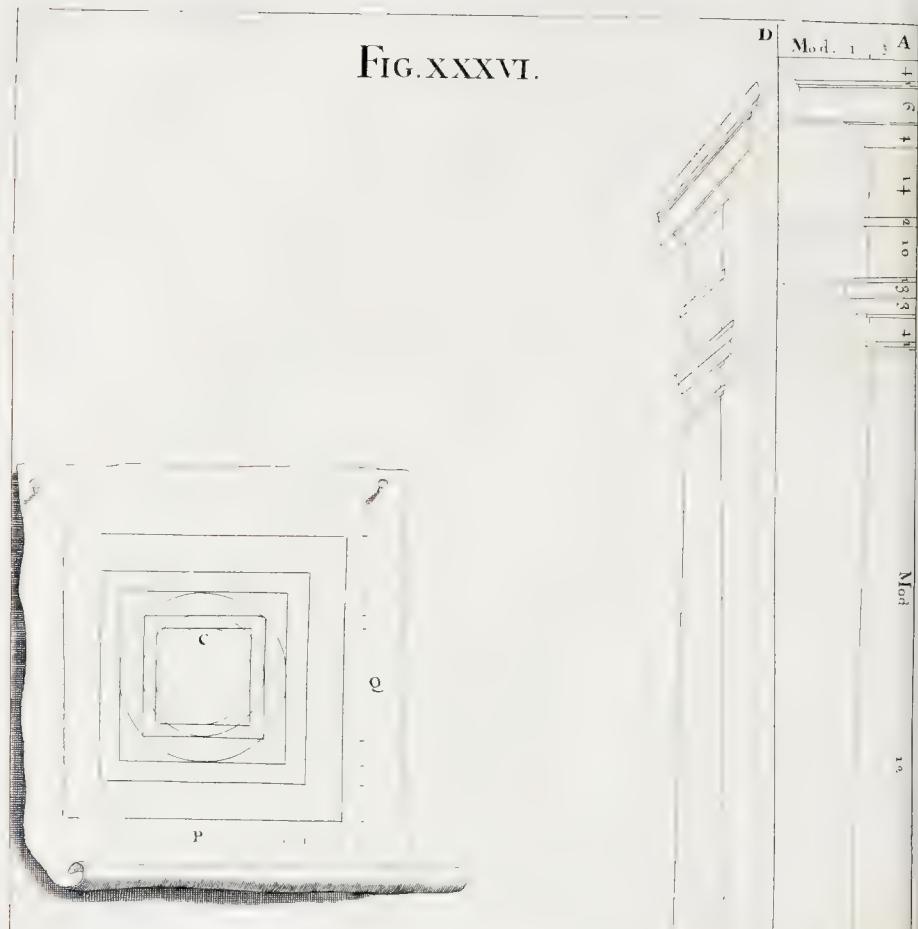




FIG. XXXVI.



The point of distance lies in Modules without the line A.B.

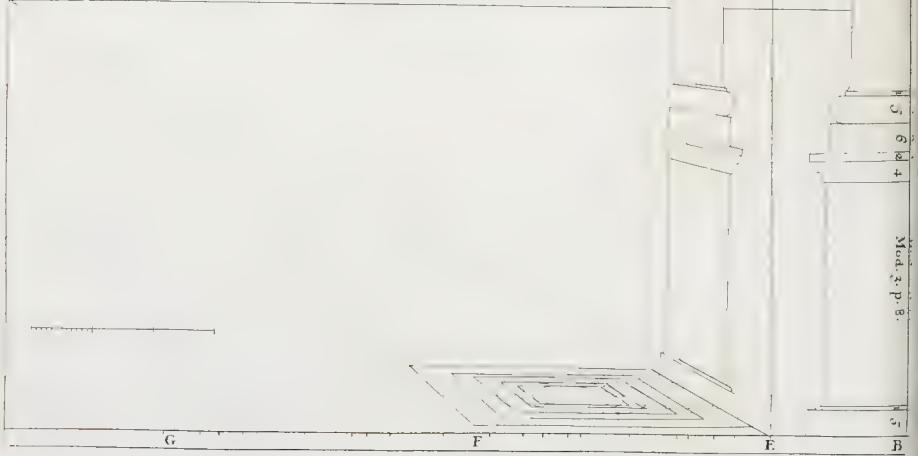


FIGURA Trigesimafesta.

Præparatio ad figuram trigesimamseptimam.

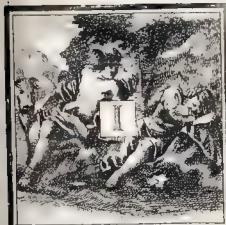


N vestigio geometrico C, & in ejus elevatione A B, præcipuas tantum lineas adnotavi, ne figuram confunderem, & ut studiorum industrie aliquid relinquem. Linea plani E G habet divisiones latitudinis P, & longitudinis Q, vestigii geometrici C. Ex punctis latitudinis ducentur more solito visuales ad O punctum oculi; ex punctis longitudinis fient occultæ ad punctum distanciæ, quod extra lineam A B protenditur modulis quatuordecim: & ubi occultæ ex divisionibus longitudinis secant visualē F O fiant parallelæ ad lineam plani E F, adhibitis sectionibus talium parallelarum cum visualibus, ad complendam deformationem vestigii.

Eadem lineæ que in vestigio deformato sunt parallelæ ad E F, prolongantur usque ad visualē E O, & continuantur cum aliis parallelis ad perpendicularē D E. Fiant quoque visuales ad punctum oculi ex divisionibus elevationis A B translati in perpendicularē D E; adhibitis sectionibus talium parallelarum cum visualibus, ad complendam deformationem longitudinis elevationis.

The Six and thirtieth Figure,

Preparatory to the Thirty-seventh.



In the Geometrical Plan C, and in the Elevation thereof A B, I have only mark'd the principal Lines, as well for avoiding Confusion in the Figure, as that something might be left to the Industry of the Studious. The Line of the Plan E G has the Divisions of Breadth P, and of Length Q, of the Geometrical Plan C. From the Points of Breadth are drawn, as usual, Visuals to the Point of Sight O; From the Points of Length occult Lines are produc'd to the Point of Distance, which lies fourteen Modules without the Line A B: And where the occult Lines from the Divisions of Length cut the Visual F O, Parallels are made to the Ground-Line E F; and from the Intersections of those Parallels with the Visuals, you complete the Delineation of the Plan in Perspective.

The Lines which in the Plan are parallel to E F, being prolong'd to the Visual E O, are then continu'd parallel to the Perpendicular D E. And from the Divisions of A B, produc'd to D E, visual Lines are drawn to the Point of Sight; which intersecting the Perpendiculars aforesaid, you from thence find the Length of the Elevation in Perspective.

FIGURA Trigesimaseptima.

Deformatio columnæ Etruscæ.



X præparatione quam exhibuimus figurâ trigesimasextâ, eruitur columnâ hæc nitida Ordinis Etrusci, opticè imminuta per latitudines & altitudines partium singularum; quæ accipiuntur ope duorum circinorum, ut sæpius dictum est.

The Thirty-seventh Figure.

A Tuscan Column in Perspective.



ROM the Preparation exhibited in the Thirty-sixth Figure, is drawn this complete Piece of the *Tuscan Order*, brought into Perspective by means of the Breadths and Heights of the several Parts, exactly taken off with the Compasses, as has been often said.

FIG. XXXVII.

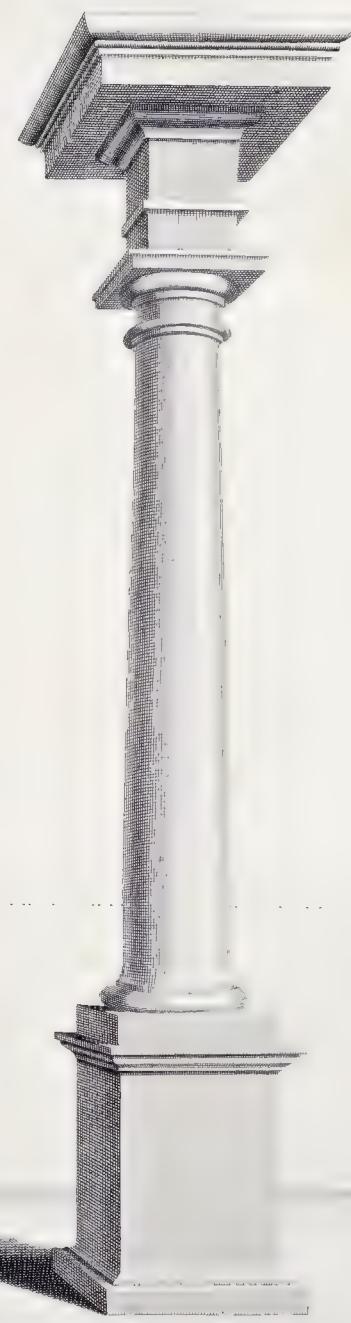




FIG. XXXVIII.

The whole height is divided into $\frac{2}{3} \frac{1}{3}$. What

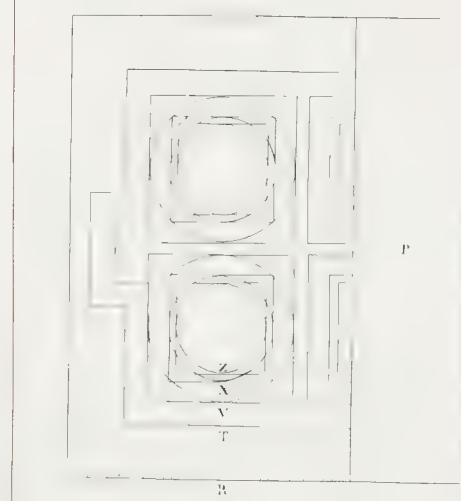


FIGURA Trigesimaoctava.

Præparatio ad figuram trigesimam nonam.

*ÆC figura est simillima figuræ trigesimæ sextæ.
In vestigio P limes prominentiaæ coronicis est R;
coronæ vero in stylobatâ est T. soliditas stylo-
batæ est V. ambitus columnæ in imo est X, in
summo Z.*



The Thirty-eighth Figure,

Preparatory to the Thirty-ninth.

HIS Figure is very much the same with the Thirty-sixth. In the Plan P, the utmost Projection of the Cornice is R; that of the Cap of the Pedestal is T; the Trunk of the Pedestal is V; the naked Shaft of the Column at bottom is X, at top is Z.



FIGURA Trigesimanaona.

Deformatio ædificii Dorici.



*ABES hoc loco ædificium Doricum, addito sta-
tuæ unius ornamento. Velim autem, ut si fi-
guram aliquam ex his desumptam, delinean-
dam assumas, aliquid mutes saltem in loco
punctorum oculi aut distantia. Hoc modo ma-
jores in hac arte progressus facies; & si ali-
cubi cælator aberraverit, ex lapsu illius nullum senties detri-
mentum.*

The Nine and thirtieth Figure.

A Piece of Dorick Architecture in Perspective.



N this Plate you have a Dorick Compo-
sition, with the additional Ornament of a
single Statue; but I would advise, when
you undertake to work after any of
these Designs, you would at least place
the Points of Sight and Distance some-
what differing from those here given; which Practice will
both greatly further your Progress in this Art, and pre-
vent any Inconvenience, that may arise from a Mistake
of the Engraver.

FIG. XXIX



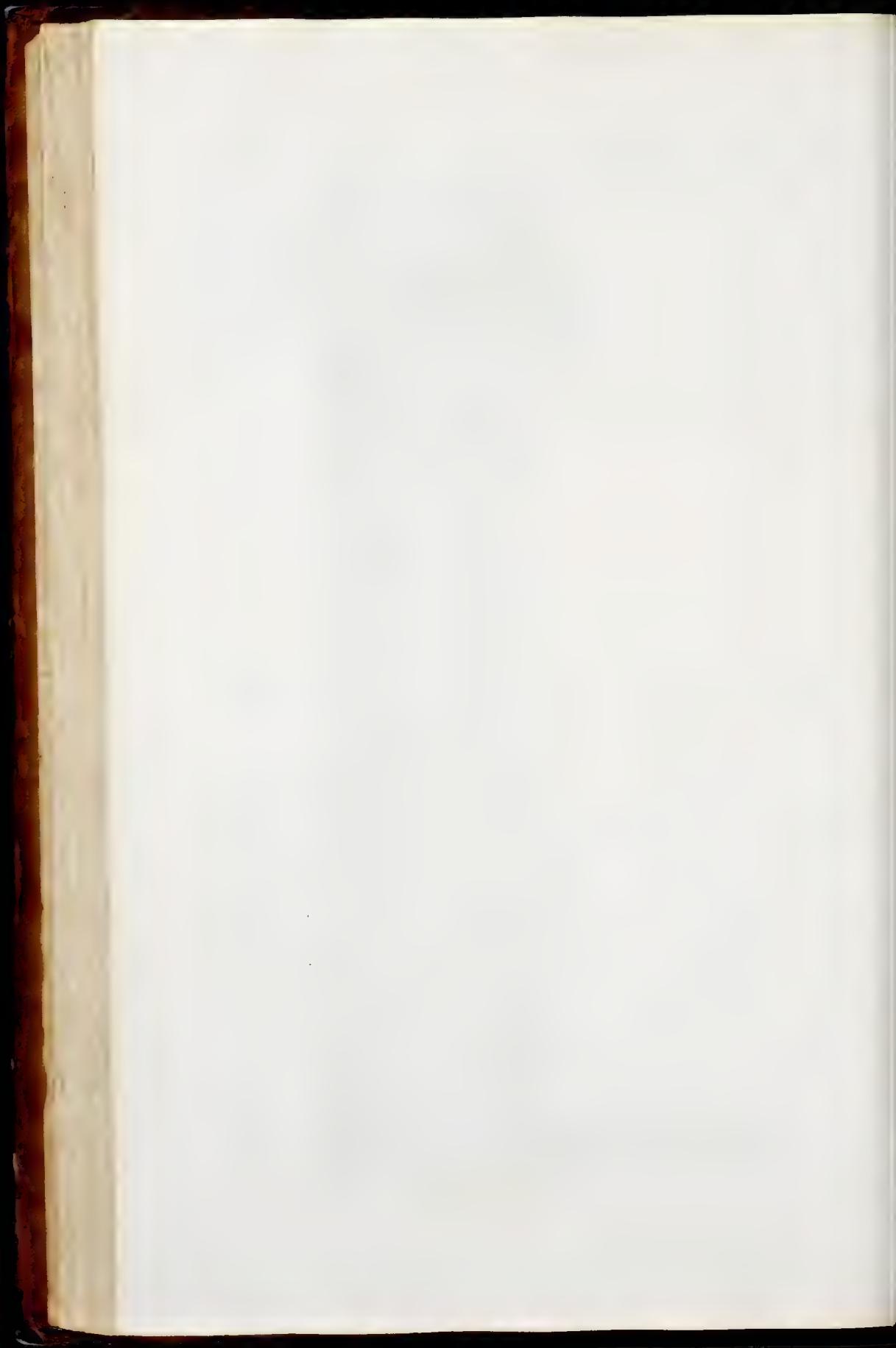




FIG. XL.

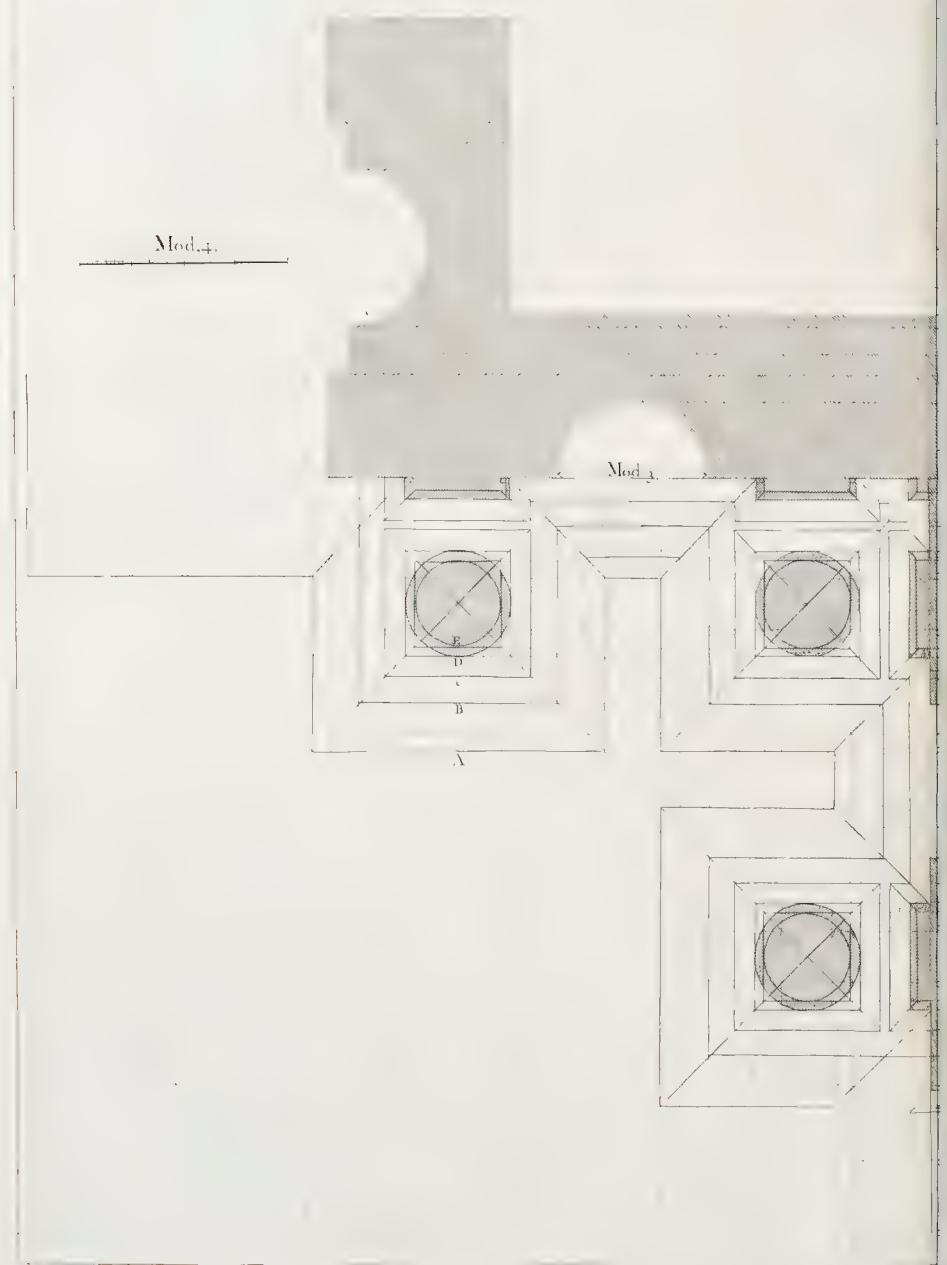


FIGURA QUADRAGESIMA.

Vestigium geometricum ædificii Ordinis
Dorici.



T studiosorum, qui sedulò se exercuerint in pra-xibus hucusque traditis, & ad majora insipient, utilitati serviam, delineandam suscepimus medietatem arcus cum tribus columnis, ac totidem statuarum loculamentis. Ad vitandam autem confusionem, ea dumtaxat membra in vestigio adumbrantur, quæ recensuimus figurâ trigesimaoctavâ, & ostendunt characteres A, B, C, D, E.

The FORTIETH FIGURE.

*The Geometrical Plan of a Design, of the
Dorick Order.*



OR the Benefit of the Studious, who, having reduc'd to Practice the Rules hitherto laid down, aim at yet greater Things ; I have here undertaken to delineate half an Arch adorn'd with three Columns, and as many Niches for Statues. But to avoid Confusion, I have given full Lines to those Members only, which were mention'd in the Thirty-eighth Figure, and which are here denoted by the Characters A,B,C,D,E.

FIGURA Quadragesimaprima.

Elevatio geometrica ædificii Dorici.



X vestigio geometrico eruitur hæc elevatio geometrica longitudinis ædificii nostri. Et ictus circò figura ista quadragesimaprima, cuius mensuræ omnes desumptæ sunt ex Barozzio, congruit longitudini figuræ quadragesimæ.

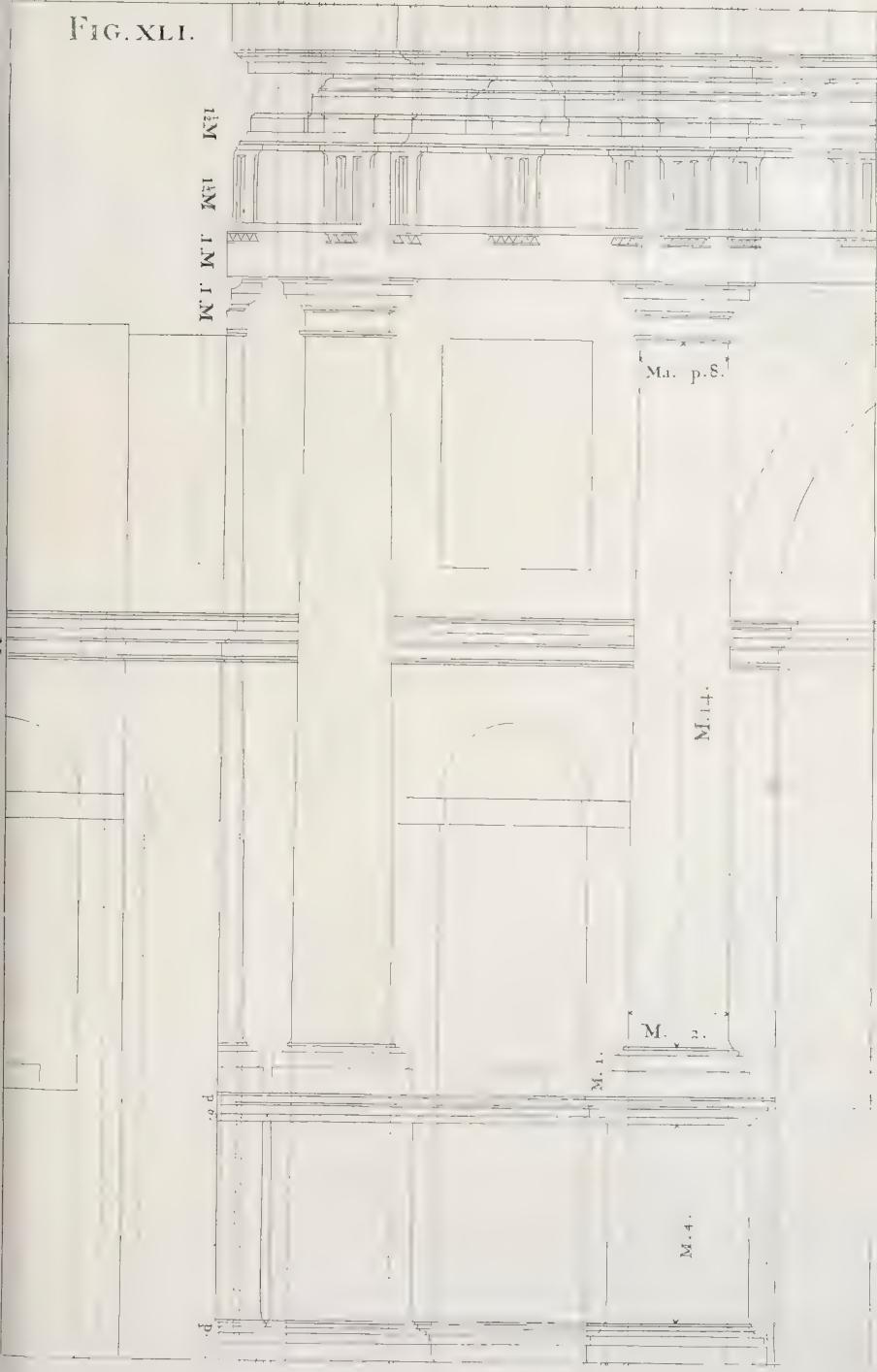
The Forty-first FIGURE.

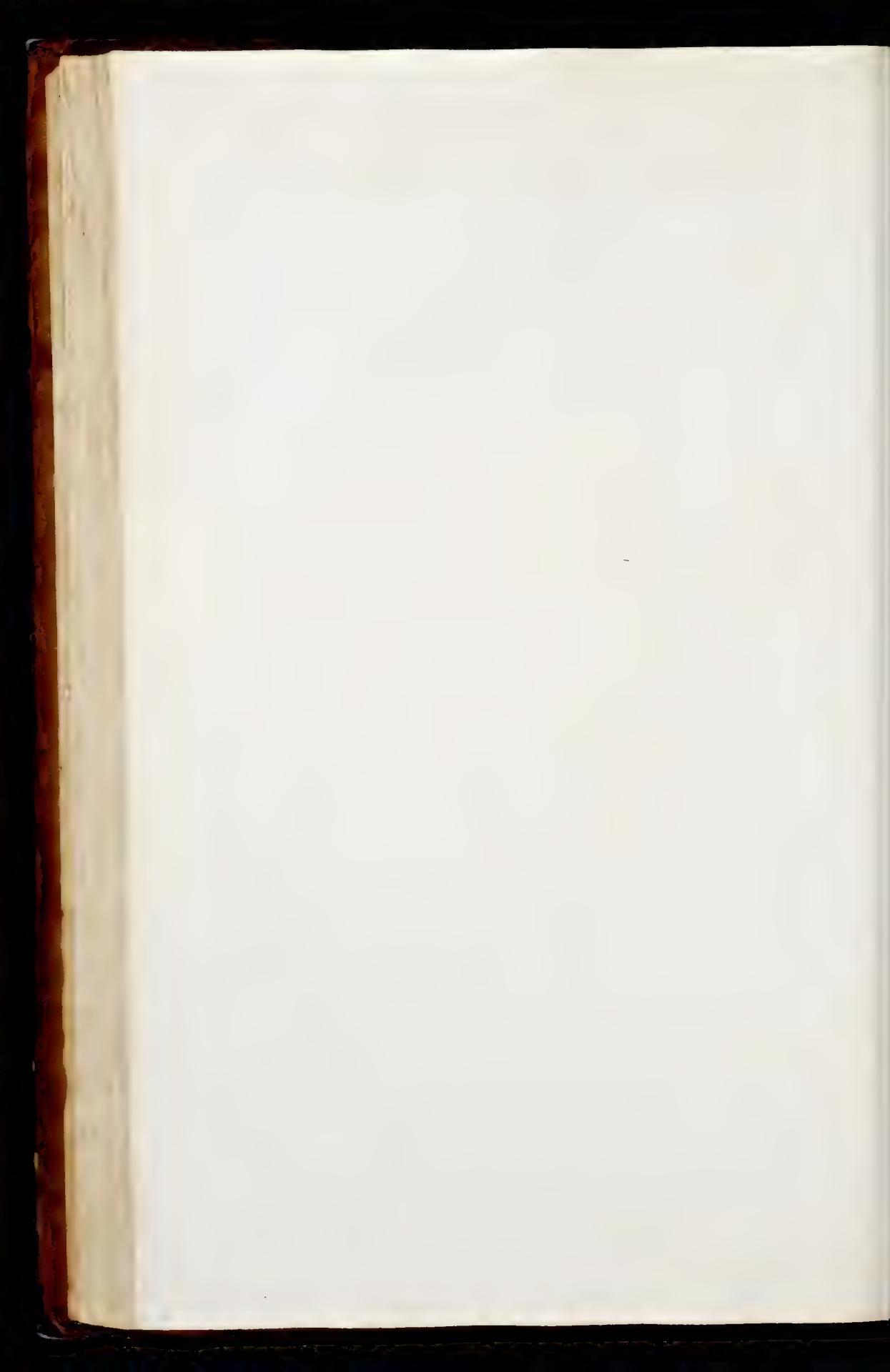
The Geometrical Elevation of the foregoing Design.



HIS Upright is drawn from the foregoing Geometrical Plan; and therefore all the Parts of this Design, whose Measures are taken from Vignola, exactly answer those of the Fortieth Figure.

FIG. XLI.





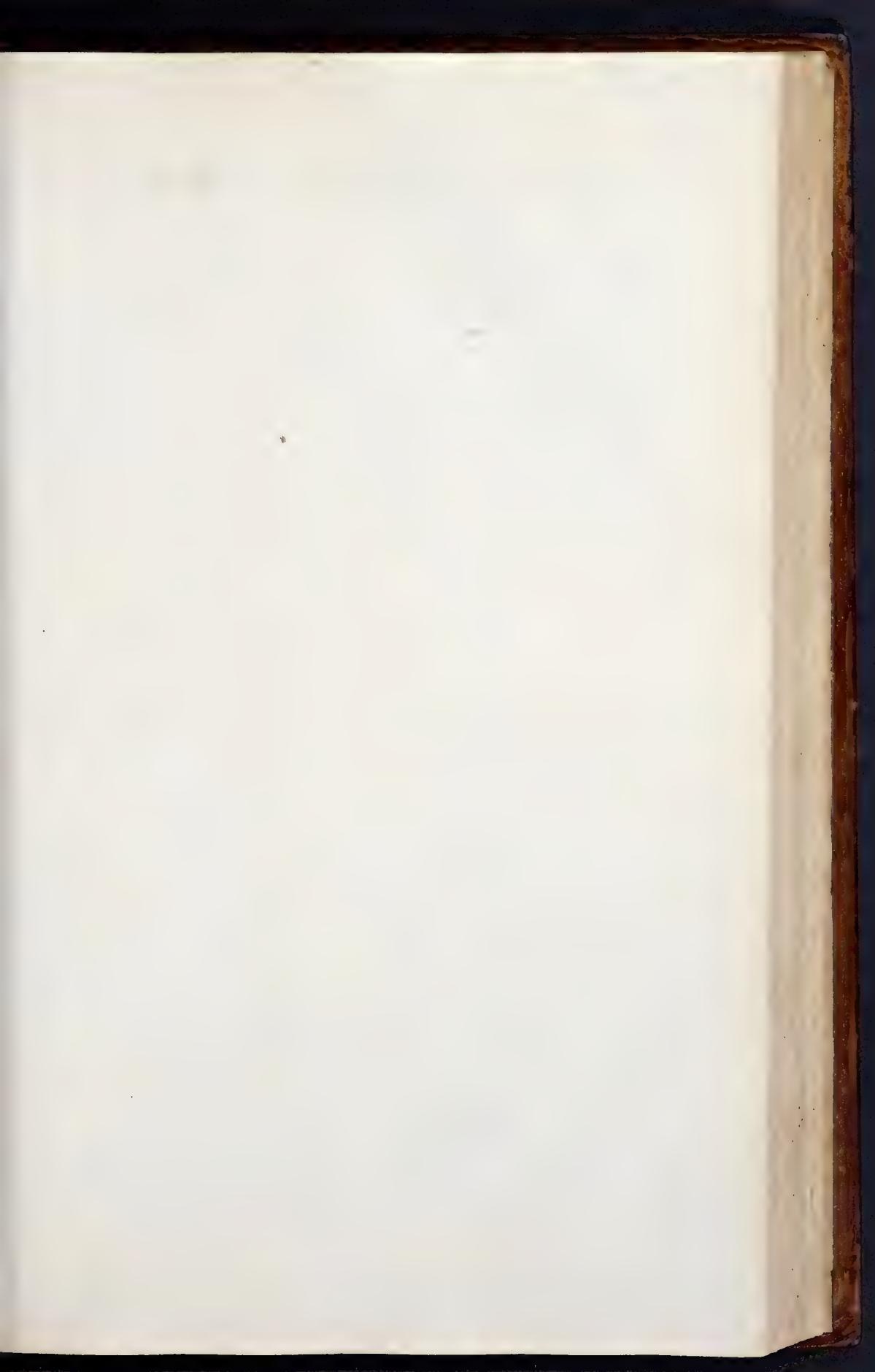


FIG XLII



FIGURA Quadragesimafsecunda.

Modus vitandi confusionem, in contractione vestigiorum, & elevationum.



ONTRACTIONES vestigii figuræ quadragesimæ, & elevationis figuræ quadragesimæ primæ, ob nimiam obliquitatem quam habent, valde confusæ sunt. Medebimur tamen in commodo isti, uti fecimus figuris decimâ & undecimâ. Et ostendit chartula, exhibens in parvo tum figuram hanc quadragesimam secundam, tum quatuor sequentes.

The Forty-second FIGURE.

The Manner of avoiding Confusion, in reducing Plans and Elevations into Perspective.



HE Reducing into Perspective the Plan of the Fortieth Figure, and the Upright of the Forty-first Figure, would become very confus'd, through the great Obliquity of the Rays: We have therefore remedy'd the Inconveniences of both, by the Methods explain'd in the Tenth and Eleventh Figures. And this Plate contains in little, what is more at large describ'd in Parts, as well in this, as the four subsequent Figures.

FIGURA Quadragesimatercia.

Contraetio vestigii figuræ quadragesimæ.



INEA plani multò remotior est à linea horizontali in hoc schemate, quam in præcedenti. Ideo istud vestigium vacat omni confusione. Cætera patent ex iis quæ sèpiùs dicta sunt, & ex figuræ hujus inspectione. Oportet autem, rectas parallelas ad lineam plani, prolongari usque ad visualem TO, (quæ cedit extra paginam) ut aminiculo parallelarum, fiat elevatio longitudinis nostri cœdificij, de qua dicemus figurâ quadragesimaquartâ.

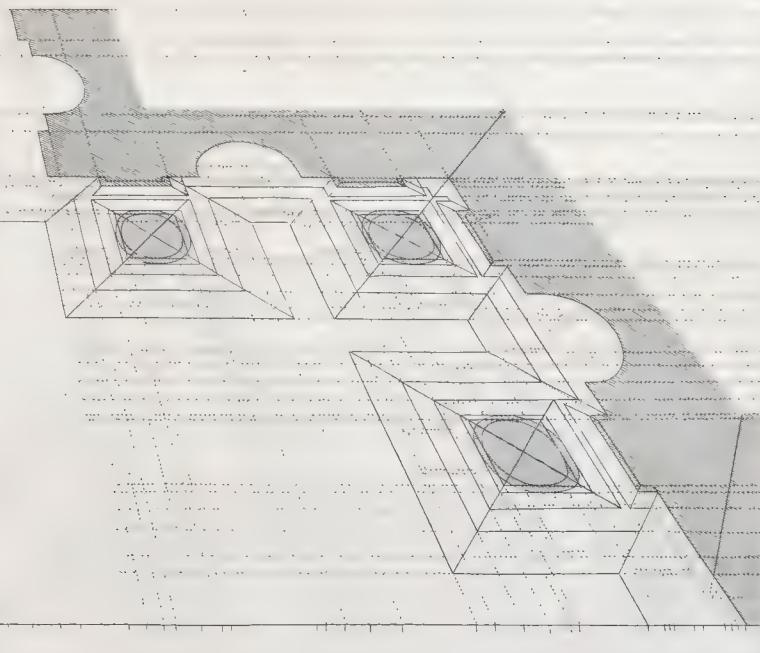
The Forty-third FIGURE.

The Plan of the Fortieth Figure in Perspective.



Y placing the Ground-line in this, much more remote from the Horizontal, than it is in the foregoing Figure, all Confusion is here avoided. The rest is evident front what has been often said on this Head and a bare Inspection of the Figure. Parallel to the Ground-line must nevertheless be continu'd to the Visual TO, which falls without this Page; than from them may be rais'd the Elevation of the Length of this Design, which we shall handle in the next Figure.

FIG. XLIII



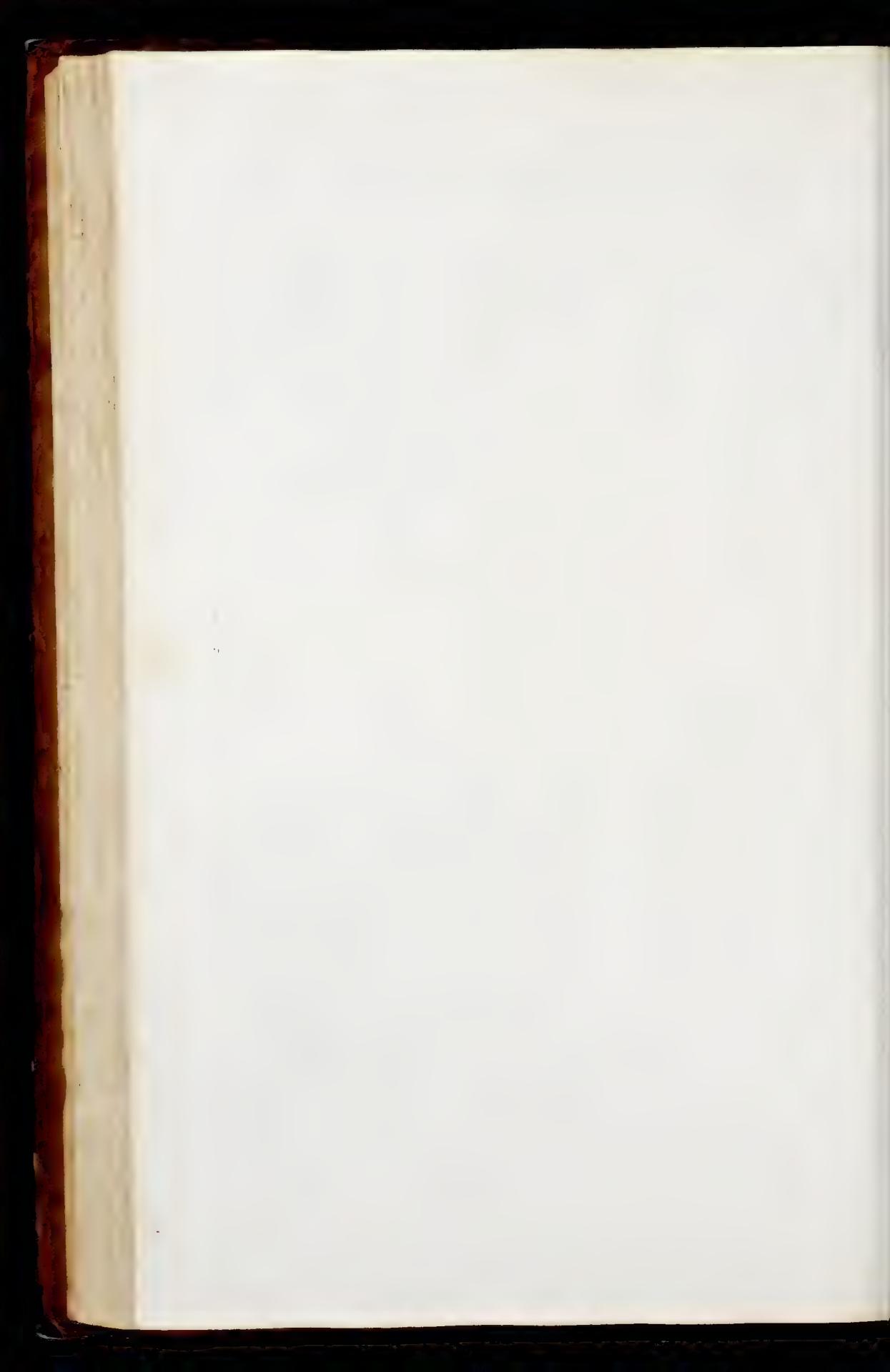




FIG. XLIV.

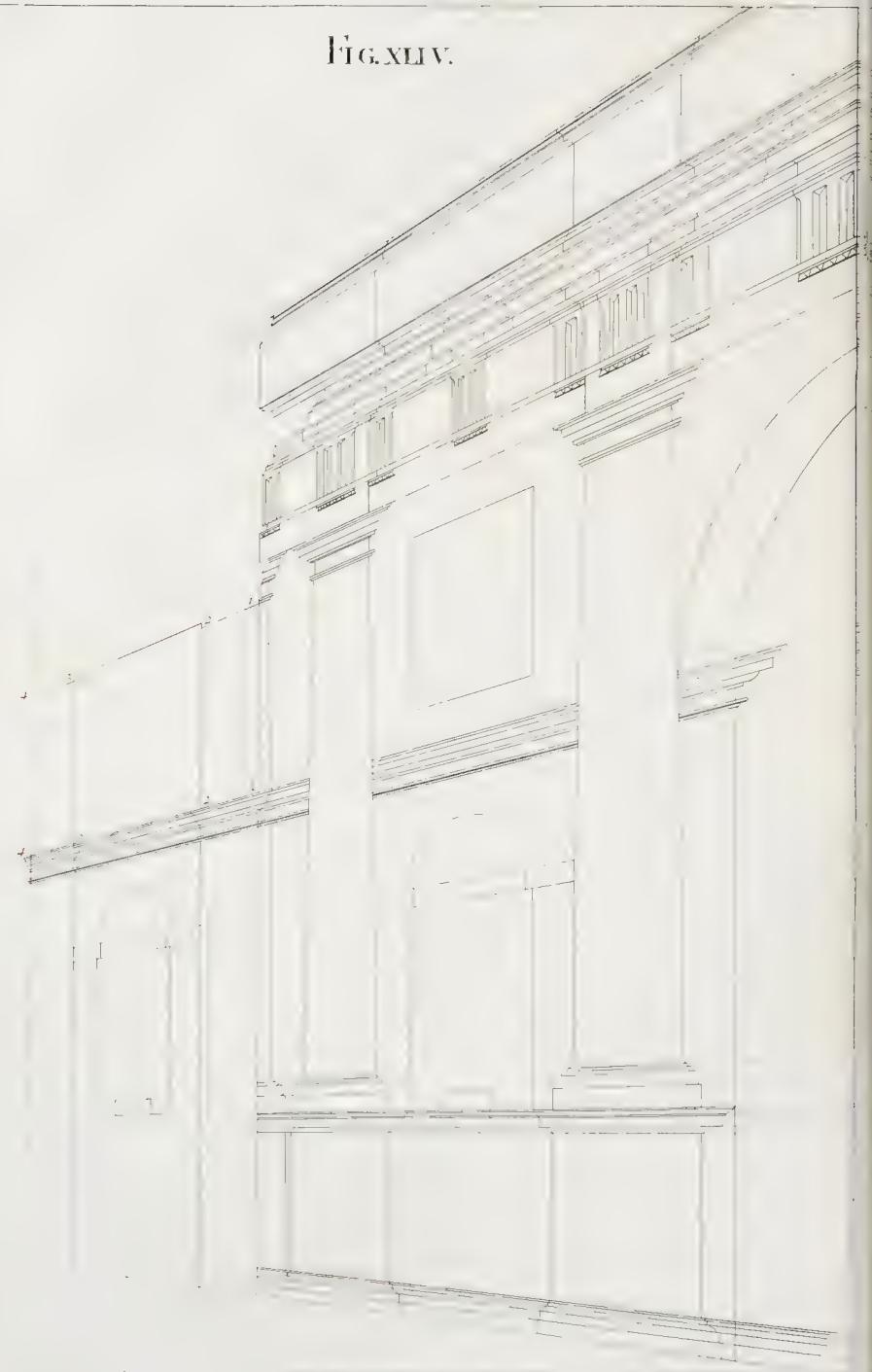


FIGURA Quadragesimaquarta.

Contractio elevationis figuræ quadragesimæprimæ.



ECTÆ parallela ad lineam plani figuræ quadragesimætertia, ubi pervenerint ad visualem TO, continuandæ sunt, more solito, cum parallelis ad lineam perpendiculararem. In hanc autem transferre oportet omnes divisiones, quas ex Barozzi habet elevatio hujus ordinis; ac ducere visuales. Quomodo autem, ab initio visualium & parallelarum, compleatur elevatio, constat ex figura, & clarius ex chartula figuræ quadragesimæsecundæ. Numeri 1, 2, 3, 4, genti- nati, ostendunt centra & altitudines semicirculorum seu arcuum figuræ quadragesimæquintæ; videlicet, numerus inferior designat centrum, superior vero plicat altitudinem semicirculi.

The Forty-fourth FIGURE.

The Elevation of the Forty-first Figure in Perspective.



HEN the Parallels to the Ground-line in the Forty-third Figure, are prolong'd to the Visual TO, they are then, as usual, to be continu'd Parallel's to the Perpendicular: On which Perpendicular, those Divisions given by Vignola, for the Proportions of this Order, are to be transfer'd; and Visuals drawn from them to the Point of Sight. How by these Visuals and Parallel's the Elevation is rais'd in Perspective, is manifest in part from this Figure, but more clearly from the Forty-second Figure. The Numbers 1, 2, 3, 4, which you here see doubl'd, give the Centers and Heights of Semicircles of the Arches in the Forty-fifth Figure; the lower Numbers denoting the Centers, and the upper Numbers the Heights of the Semicircles of the same.

FIGURA Quadragesimaquinta.

Dimidium ædificii Dorici opticè deformati.



UIC figuræ delineandæ plures præiverunt, ejusdemque latitudines mutuati sumus ex figura quadragesimatertia, altitudines ex quadragesimaequa. Superest autem, ut lumina & umbræ scitè inducantur in singulas partes ædificii.

The Forty-fifth FIGURE.

One Half of the Dorick Design in Perspective.



HE foregoing Figures being preparatory to this, the Breadths are taken from the Forty-third, and the Heights from the Forty-fourth Figure. It only remains, that the Lights and Shades be skilfully disposed to each Part of the Work.

FIG. XLV.

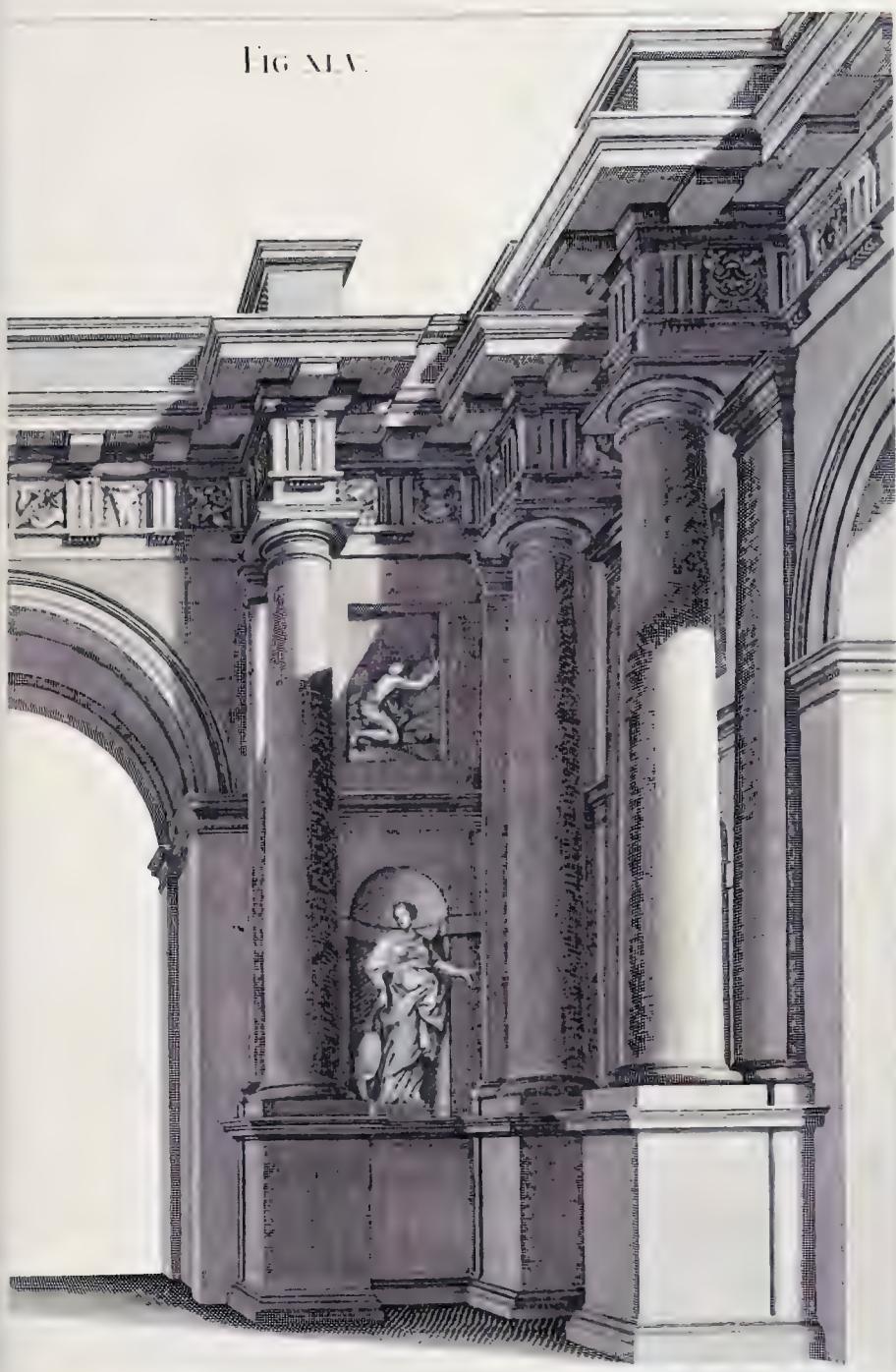






FIG: XLVI.



FIGURA Quadragesimafesta.

Alterum dimidium ejusdem ædificii.



UPERSEDERE poteram delineatione alterius medietatis ædificii nostri. Verum operæ non pepercí, ut ostenderem diversitatem luminum & umbrarum, quæ convenientiunt partibus cæteroqui omnino similibus.

The Forty-sixth FIGURE.

The other Half of the same Design.



Might very well have omitted this Half of the Design, but that I spar'd no Pains, to shew the Diversity of the Lights and Shadows, that must be given to those Parts of the Work, which in other Respects are alike.

FIGURA Quadragesimaseptima.

Vestigia ædificii Ionici.



ESTIGIUM geometricum A ædificii Ionici, sub se habet suam deformationem B. Hec autem ut evadat distinctior, lineam plani, que in sequentibus figuris habebit distantiam PE ab horizontali OE, deorsum protractimus in CD, ut etiam fecimus figuræ quadragesimasecundi & quadragesimatertiæ. Linea visualis OM eundem habet usum, quem visualis OT figuræ quadragesimætertiæ; videlicet, ut in ea terminentur parallele ad lineam plani ex membris vestigii B, eademque continuentur cum aliis parallelis ad rectam EC, pro deformandâ elevatione quam apponemus figuræ quadragesimænonâ.

The Forty-seventh FIGURE.

The Plan of an Ionick Building.



THE Geometrical Plan of this *Ionick Work* is A, underneath is its Perspective B ; to render which more distinct, the Ground-line that in the following Figures has only the Distance PE from the Horizontal EO, is here remov'd downward to CD, as was done in the Forty-second and Forty-third Figures foregoing. The visual Line OM is of the same use as that of OT in the Forty-third Figure ; namely, to terminate the Lines which are drawn from the Members of the Plan B parallel to the Ground-line ; from whence they are again continu'd parallel to the Perpendicular EC, for making in Perspective the Elevation inserted in the Forty-ninth Figure.

The Horizontal line
or Distance is 16 Modules without the line E.C.

E

FIG. XLVII.

P. For Ground Plan & Drawing Figures.

L.
The Line of Intercision

Mod 5

B

C



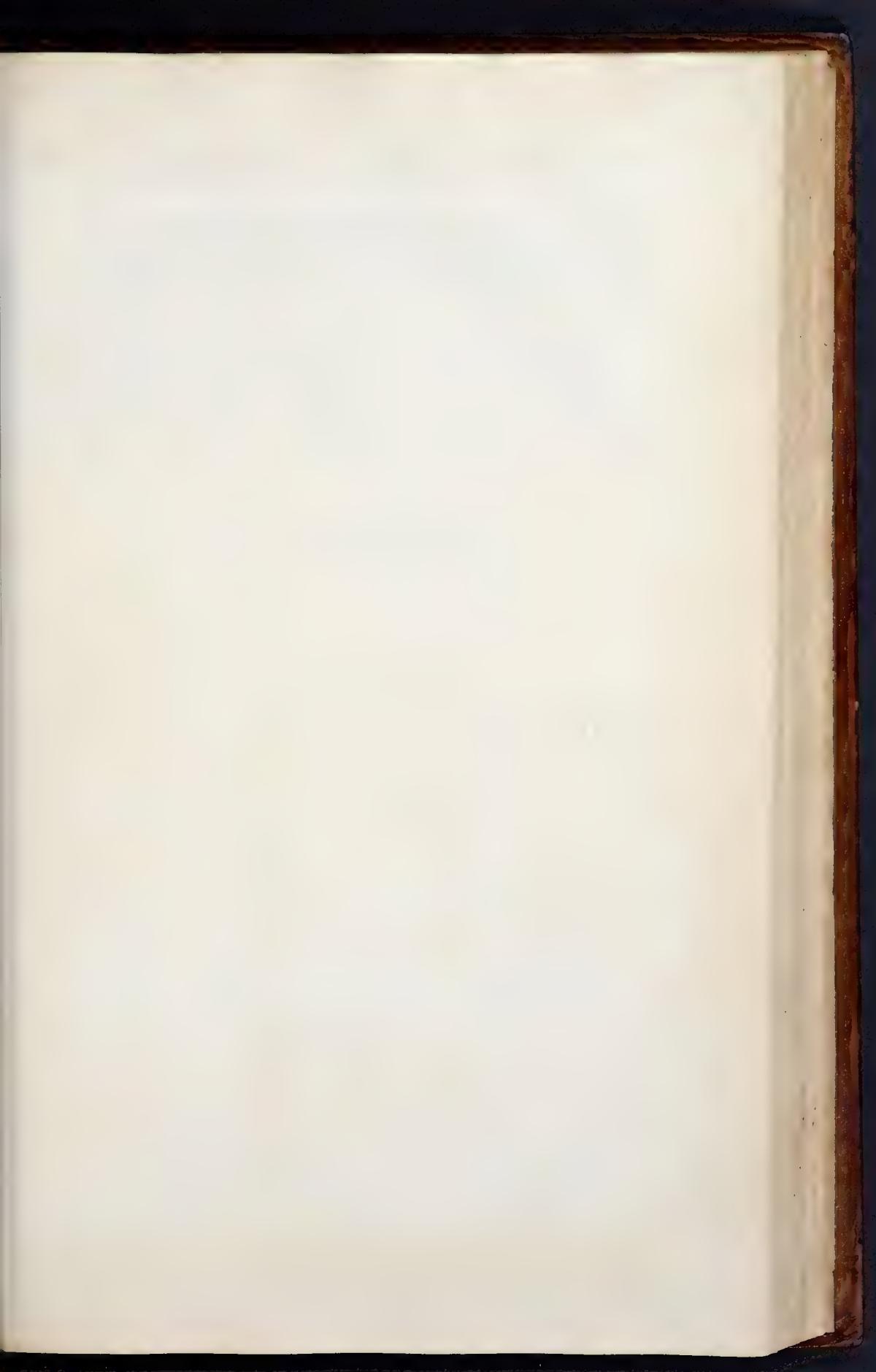
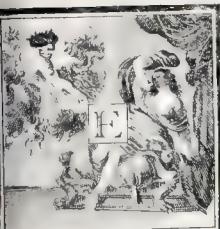


FIG. XLVIII



FIGURA Quadragesima octava.

Elevatio geometrica ædificii Ionici.



X hac elevatione quæ clarè ostendit membra totius ædificii secundum longitudinem dissecti, defumuntur altitudines ac terminations membrorum singulorum. Peritiores tamen hac figurâ delineandâ supersedere solent, quia terminations haberi possunt ex vestigio A figuræ quadragesimæ septimæ, altitudines verò ponenda iterum sunt figurâ sequenti.

The Forty-eighth FIGURE.

The Geometrical Upright of the foregoing Ionick Design.



ROM this Figure (which distinctly shews the Composition of the whole Work, in respect of its Length) are taken the Heights and Terminations of the several Members thereof. But those that are skill'd in this Art, usually omit the delineating these Elevations; because the Terminations may be taken from the Plan A in the Forty-seventh Figure; and the Heights must be repeated in the following Figure.

FIGURA Quadragesima nona.

Deformatio elevationis ædificii Ionici.



ſualium ex linea AB, cum parallelis ad eandem lineam.

ÆC figura continens deformationem præcedentis elevationis, perficitur methodo illa, quam ostendimus figurâ quadragesimæ secundâ; nimirum, ex vestigio B figuræ quadragesimæ septimæ, ducere oportet parallelas ad lineam plani CD, quæ ubi pervenerint ad visualem OM, continuande sunt cum aliis parallelis ad lineam EC. Easdem parallelas in hanc figuram translatas secant visuales ex linea recta AB, in qua positæ sunt altitudines ædificii Ionici, desumpta vel ex figura præcedenti, vel ex Barozzo. Nullum autem eft punctum in membris hujus elevationis, quod non inveniatur per sectiones vi-

The Forty-ninth FIGURE.

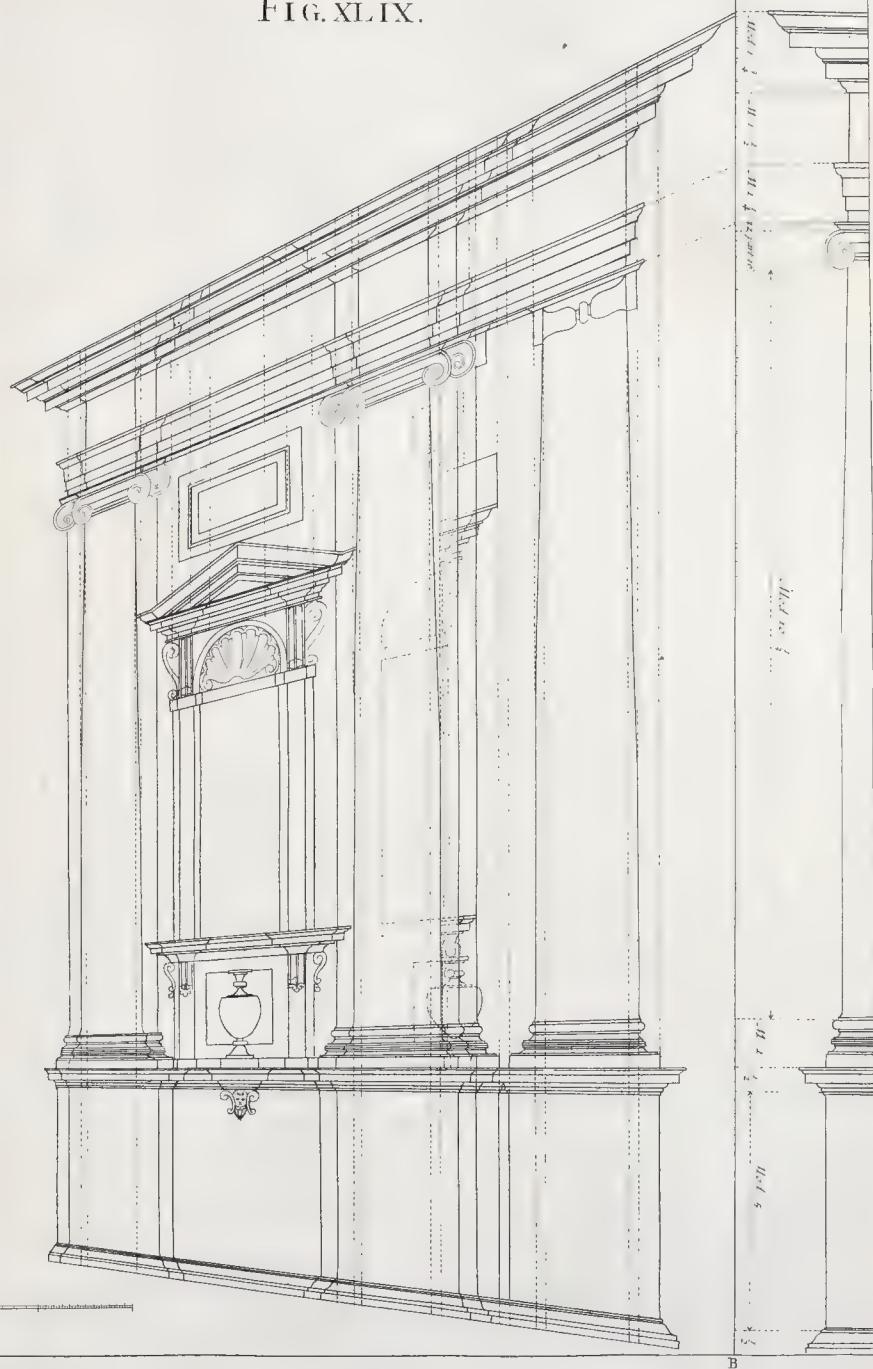
The Elevation of the Ionick Design in Perspective.



HIS Plate containing the Perspective of the foregoing Upright, is drawn by the Method laid down in the Forty-second Figure; to wit, from the Plan B of the Forty-seventh Figure, Parallels to the Ground-line CD are prolong'd to the Visual OM; and thence are continu'd Parallels to the Perpendicular EC. These being transferr'd into this Figure, are intersected by the visual Lines that proceed from AB, which contains the Heights of this Ionick Composition, agreeable to the foregoing Figure, and the Rules deliver'd by Vignola. Now there is no Point in any

Member of this Upright, but may be found by the Intersection which the visual Line from AB makes with its respective Perpendicular.

FIG. XLIX.



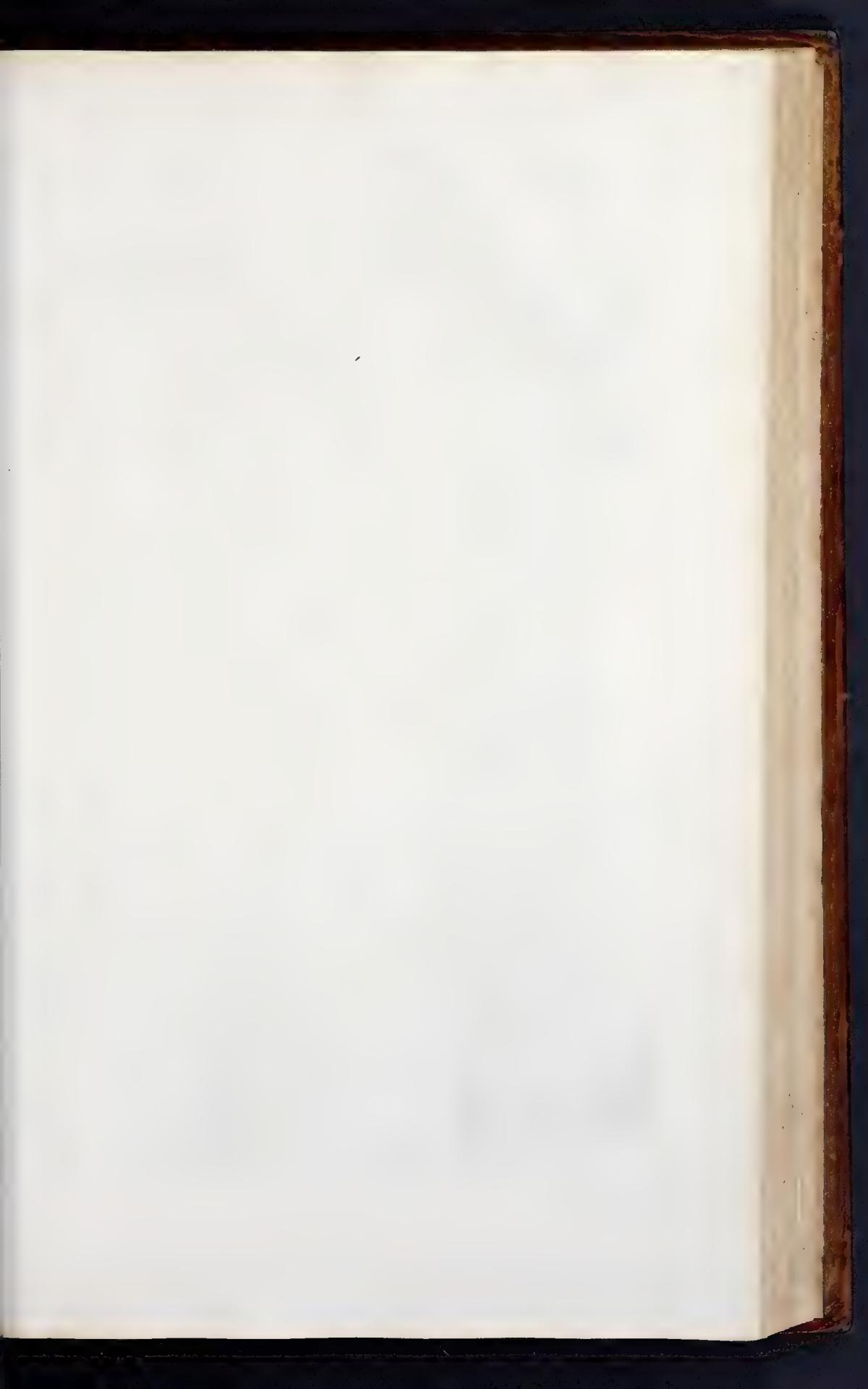


FIG. I.

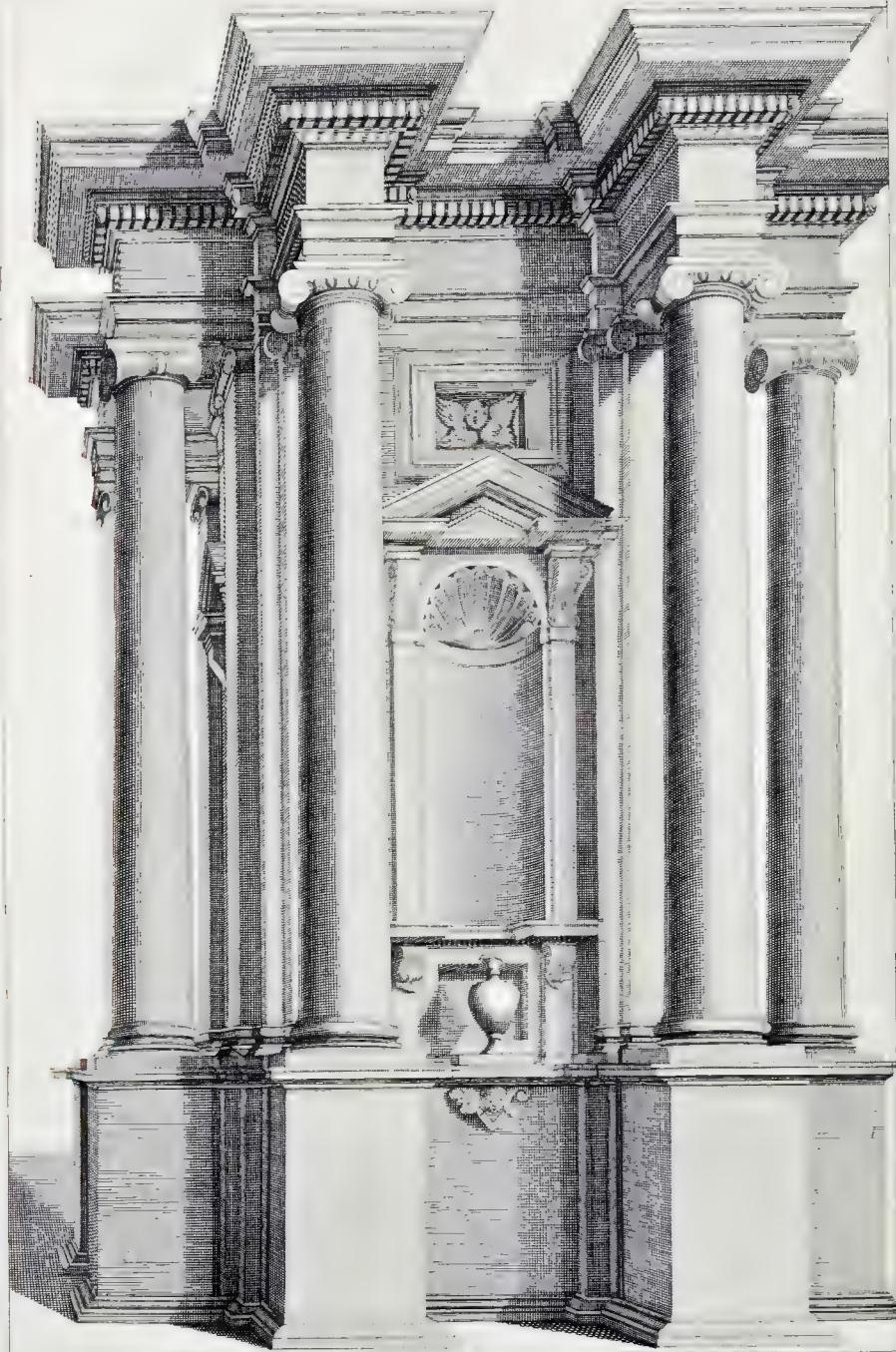


FIGURA Quinquagesima.

Architecturæ Ionica.



X vestigio figuræ quadragesimæ septimæ, & ex elevatione figuræ quadragesimæ nonæ, eruitur hoc ædificium Ionicum, quod esse poterit vel principium alicujus turris campanariæ, aut basis cunctissimam arcus triumphalis. Vereor ut cælator suam diligentiam in hoc schemate satis probaverit. Ejus tamen errata facile ipse deteges, & omni studio rabebis.

The Fiftieth FIGURE.

A Design of Ionick Architecture.



ROM the Plan of the Forty-seventh Figure, and from the Upright of the Forty-ninth Figure, is drawn this *Ionick* Piece ; which might well serve for the lower Order of a Turret, or for part of a Triumphal-Arch. I fear the Engraver has not been so exact in this Scheme, as he ought ; but you will readily discover his Mistakes, and carefully beware of them.

FIGURA Quinquagesima prima.

Ordo Corinthius.



OMPLECTITUR hæc pagina molem contram Ordinis Corinthii, cum suis præparatiōnibus. Vestigium A exhibet parietem pone columnas cævum instar canalis. Idem vestigium opticè deformatur in D: omissaque elevatione geometricâ, per ejus altitudines notatas in linea BC projicitur elevatio; ac methodo consuetâ, ex vestigio & elevatione componitūr ædificium, addito statuē unius ornamento.

The Fifty-first FIGURE.

A Corinthian Design in Perspective.



HIS Plate contains the Perspective of a Corinthian Work, with its Preparations. The Geometrical Plan A shews the Wall wrought hollow behind the Columns. The said Plan in Perspective is D: and leaving out the Geometrical Elevation, the Perspective thereof is describ'd, by transferring the Heights of the former into the Line BC. From the Perspective-Plan and Upright the Design is finisht after the usual Manner; to which is added the Ornament of a single Statue.

FIG: LI.





FIG. LIII.

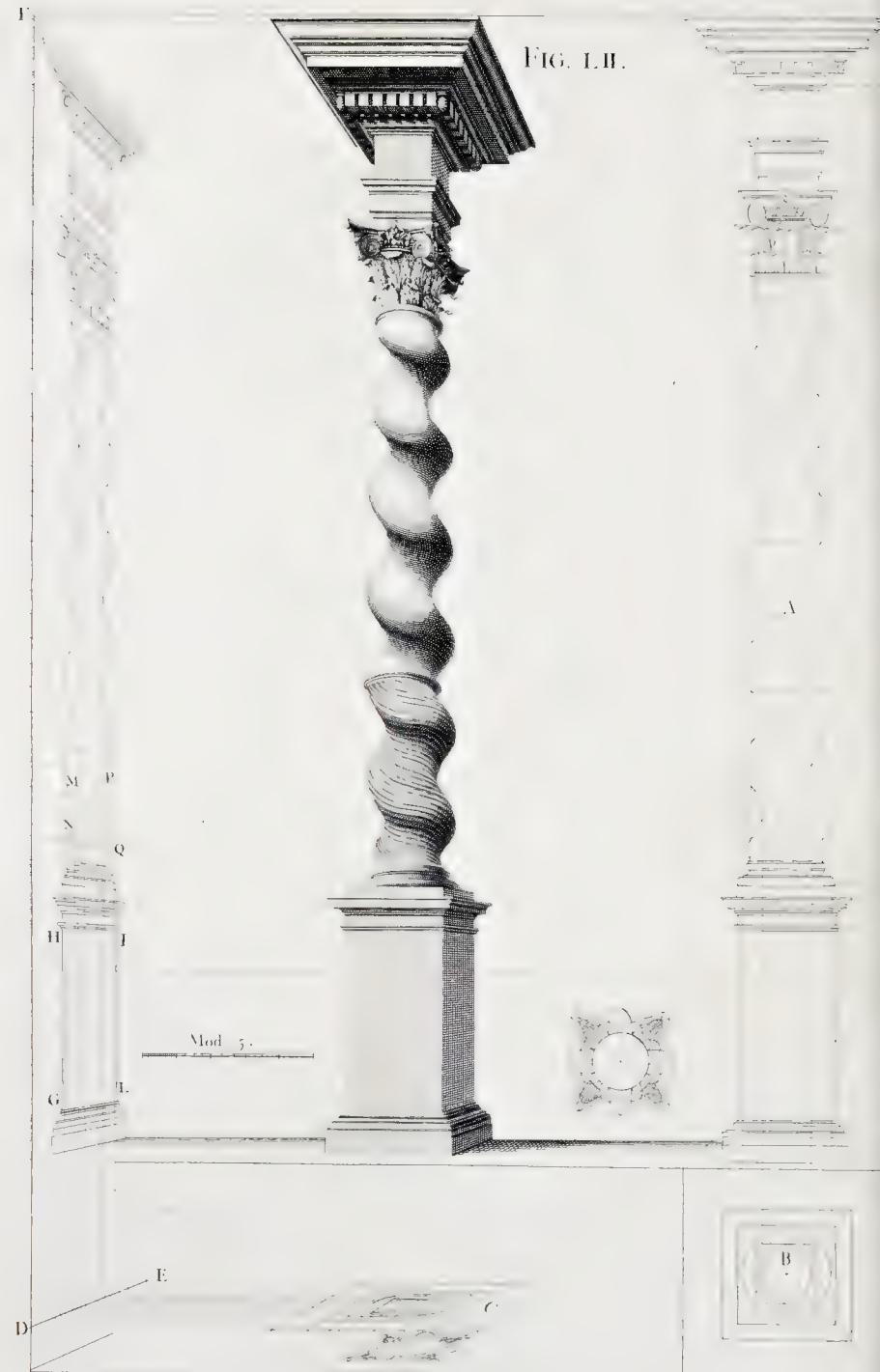


Figura Quinquagesimafecunda.

Delineatio columnæ spiralis, Ordinis Compositi.



OSITA elevatione geometrica columnæ rectæ, ac divisione illius in vigintiquatuor partes æquales, columnæ spiralis absolvitur per partes circumferentia circulorum, quorum diametri sunt æquales diversis latitudinibus columnæ rectæ, ut ostendit figura in A. Ad projectionem opticam elevationis, notande sunt quatuor occultæ rectæ, quæ ex terminis convexitatis & concavitatis infimarum spirarum ejusdem elevationis A, descendunt ac definunt in duos circulos vestigii geometrici B. Vestigium ipsum optice immunitum habetur in C: eodem autem sunt maximæ hinc inde latitudines, tum in circulo majori, tum in convexitate infimarum columnæ spirarum; eadem sunt maximæ latitudines, tum in circulo minori, tum in concavitate ipsarum spirarum; ut dignosces applicando regulam spiris simul & circulis. Ex quatuor punctis maximæ latitudinis duorum circulorum, incipiunt quatuor lineaæ parallele ad lineam plani, quæ ubi pervenerint ad visualē ED, continuanda sunt cum parallelis ad perpendicularē DF. In eandem lineam DF, ex elevatione A transferre oportet vigintiquatuor partes æquales altitudinis columnæ, ac ducere visualē ad O punctum oculi. Per sectionem autem visualium cum predictis quatuor parallelis ad lineam DF, ducuntur lineaæ undulatæ MN, PQ, ex quibus eruuntur lineaæ utrinque terminatiæ columnæ spiralis nitide. Ex linea vero GH habetur facies anterior stylobatæ, columnæ & cornicis; ex linea IL facies eorum posterior.

The Fifty-second FIGURE.

The Description of a wreath'd Column, of the Composite Order.



AVING made the Geometrical Elevation of a streight Column, and divided the Height of its Shaft into Four and twenty equal Parts; the Wreathing is describ'd by Parts of the Circumference of Circles, whose Diameters are equal to the several Breadths, or Diameters, of the streight Column; as is shewn in the Figure A. For putting the Upright into Perspective, four freight occult Lines are of use, which delcend from the Extent of the Swellings and Sinkings of the lower Wreaths of the Column A; and terminate in two Circles of the Geometrical Plan B. The said Plan laid down in Perspective is C. The utmost Extent of the greater Circle determines that of the Convex Parts of the lower Wreaths: The greatest Breadth of the lesser Circle gives that of the hollow Parts of the said Wreaths; as may be perceiv'd, by applying a Ruler from the Wreaths to the Circles of the Plan. From the four Points of greatest Breadth in those Circles, four Lines parallel to the Ground-line are continu'd to the Visual ED, and thence again continu'd parallel to the Perpendicular DF. From the Elevation A, the Four and twenty equal Parts of the Columns Height are transfer'd into the Line DF, and Visuals drawn from each to the Point of Sight O. By the Intersections of those Visuals with the four Perpendiculars aforesaid, are drawn the wav'd Lines MN, PQ; from which, both the Out-lines of the finish'd Column are describ'd. But the Fore-part of the Pedestal, Column, and Cornice, is taken from the Line GH; the Back-part of the same from the Line IL.

Fig. Quinquages. tertia A.
Ordines Architecturæ, desumpti ex
Palladio & Scamozio.

The Fifty-third Figure A.

*The Orders of Architecture, taken from
Palladio and Scamozzi.*

*E Ordinibus Architecturæ,
præter Barozzum, egregie
scriperunt Palladius & Scamozzi;
ac singuli, jure me-
rito, suos habent affectas &
patronos. Ut ergo, etiam ju-
xta laudatissimorum Autorum placita, opticas
projectiones facere possis, omnes Ordines in hac
pagina exhibere volui, ut in eorum Libris in-
veniuntur.*



BESIDES *Vignola*, *Palladio* and *Scamozzi* have also
written excellently well
of the Orders of Archi-
tecture; and each of 'em
have deservedly their Fol-
lowers and Admirers. That you might
therefore be enabled to make Designs in
Perspective, after the Proportions of the
most celebrated Masters, I have in this Plate
given you the Measures of all the Orders,
as deliver'd by them in their Books.

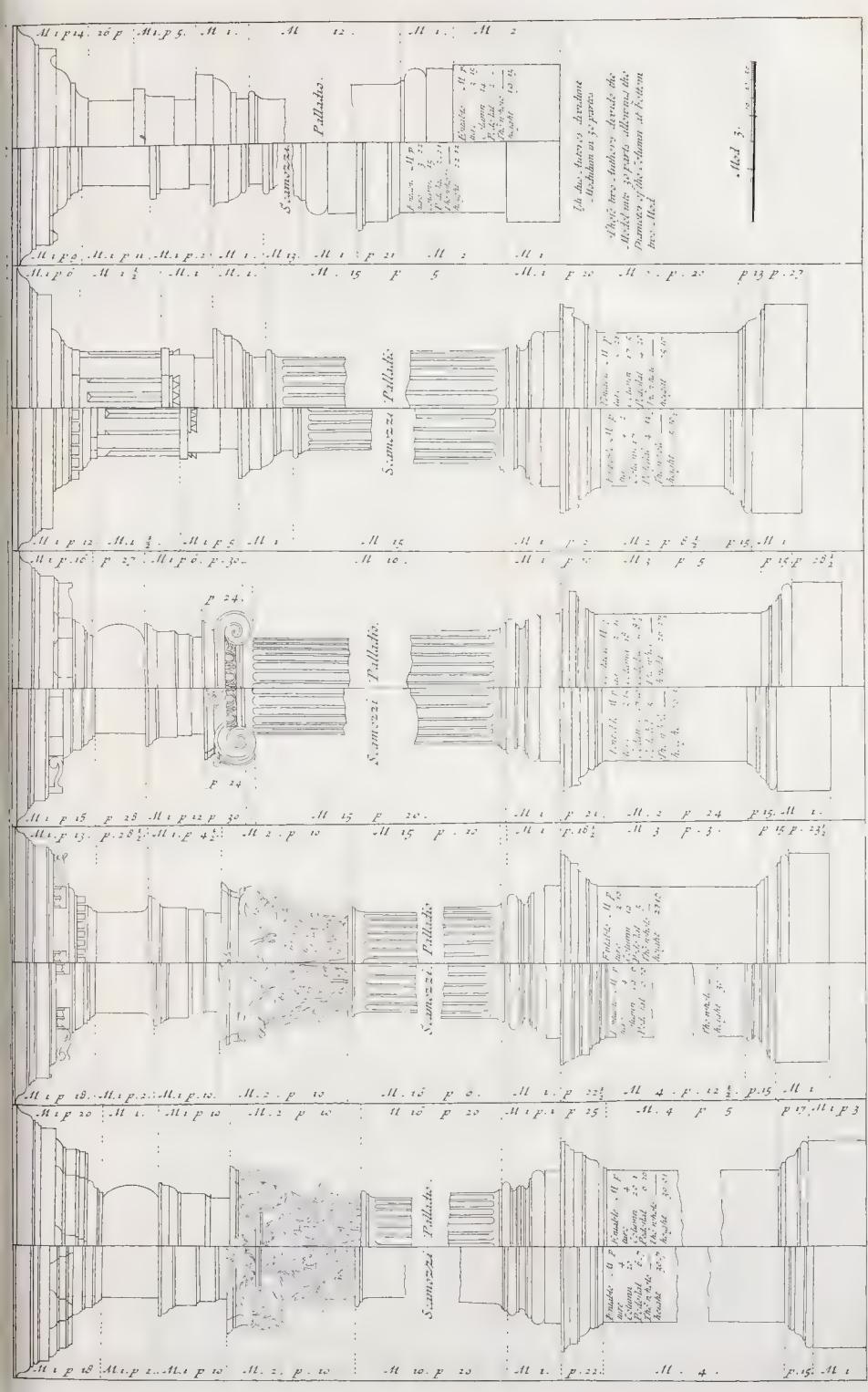






FIG. LIII. B.

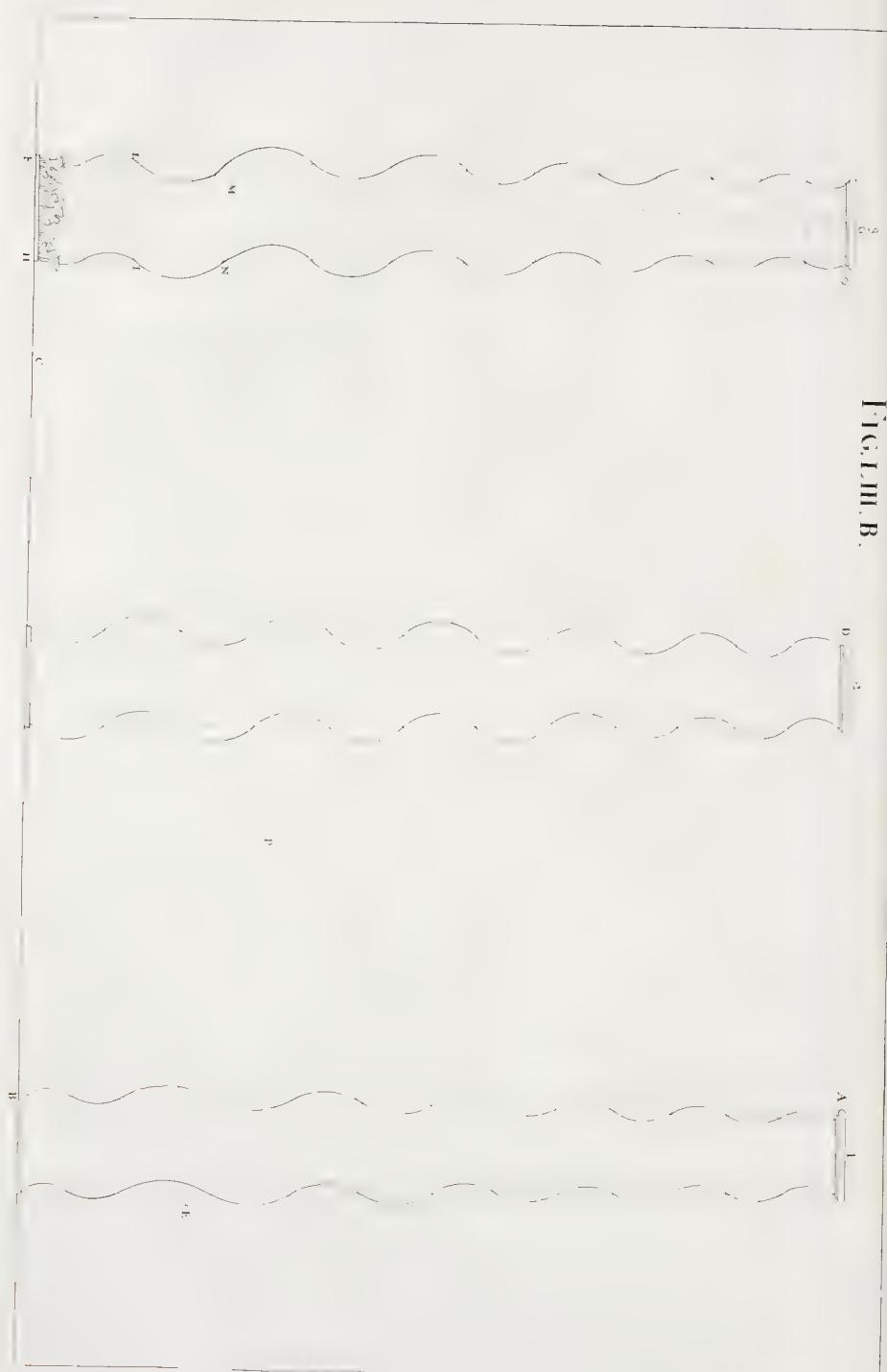


Fig. Quinquagēt. tertia B.

The Fifty-third Figure B.

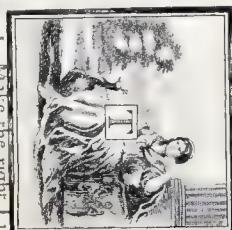
Three different Ways of delineating wreath'd Columns.



Modus triplex delineandi columnas spirales.

O. I. U. M. N. E. figuræ superioris carent et concin-
nitate, qua prædictæ sunt columnæ spirales once-
leberrimi Equitis Bernini ad sepulchrum S. Petri
in Vaticano. Itaque methodum triplicem exhibeo ad
minimenda spatio totius altitudinis columnæ.

1. Recta OA sit æquale altitudini AB co-
lumne. Fiat autem recta OB, & arcus AP ex
centro O, abvix in partes duodecim aequales di-
viso rectas, quæ pro puncta divisionum definiant in columnam regiam; ac de-
num fiant parallela ad basim: Spatia inter has parallelas dabant aperturam
circum pro triangulis equilateris & pro spiris, ut offendit columna 1.



2. Trajuncta in C tertia parte altitudinis columnæ ab ejus ino scopo, ha-
beat circumflexum CD; ac posito uno eius cruce prius in D, posita in C,
fiant duo parvi arcus ad E: festio illorum arcuum erit contrarium arcus DC,
quem oportet dividere in duodecim partes aequales, & ex punctis divisionum du-
cere parallelas ad basim. Tum spatii inter parallelas diffis in quator partes
aequales, tres ex illis partibus dabant longitudinem curvarum pro triangulis iofecili-
bus; vertices autem triangulorum erant centra singularium spirarum, ut offendit
columna 2.

3. Dugæ ex medio summittatis G rectâ GF, spatium HF transferatur in I,
et fiat recta IL parallela ad basim HF; spatium IL transversatur in N, ac
fiat NM, & sic demiceps. In parvis columnis triangula sine sensibili errore
duci possunt per diagonales: in columnis tamen grandioribus, alterutrum ex mo-
dis antea explicatis adhibere necesse est.

HE wreath'd Columns described in the Fifty-
second Figure, being divided into Twenty-four
equal Parts, want very much of that Elegancy
of Contour, which is visible in those braids Pil-
lars, made by the famous Cavalier Bernino, for
S. Peter's Sepulcher in the Vatican. Therefore
I here lay before you three several Ways of di-
minishing the Spaces through the whole Height
of the Column.

1. Make the right Line OA equal to AB the Height of the Column;
then draw the Line OB, and on the Center O describe at pleasure the
Arch AP, which divide into twelve equal Parts, and by the Divisions
draw Freight Lines from the Center O to the Line of the Column; and
lately continue the same Parallels to the Base. The Spaces between these
Parallels, shall be the Sides of equilateral Triangles, wherewith you are
to describe the Wreath of the Column, as is seen in Column 1.

2. Having set the third Part of the Columns Height, from the Bottom
of the Shaft to the Point C, with the Interval CD, from the Centers D
and C, describe the Parts of Arches intersecting at E. On the Center E,
with the same Interval, describe the Arch DC, which divide into twelve
equal Parts, and from the Points of thole Divisions, draw Parallels to the
Base. Then dividing each Space between the Parallels into four equal
Parts, three of thole Parts shall be the Sides of the *Iofeciles* Triangle;
whose Vertex is the Center whereon to describe each Wreath of Column 2.

3. Having drawn from the mid of the Columns top G, the Line GF,
make HI equal to HF, and draw IL parallel to the Base HF: Again,
make IN equal to IL, and draw NM also parallel, and so on. In small
pillars, the Centers of the Diagonals of thole Spaces may, without sensi-
ble Error, serve for describing the Wreaths; but in greater Columns, ei-
ther of the other two Methods is rather to be chosen.

FIGURA Quinquagesimaquarta.

Vestigia ædificii Ordinis Corinthii.



ESCRIPTRI ædificium Corinthium octangulare, ponimus hic vestigia unius ex quatuor partibus pilorum, quibus imponetur fornix in modum tholi, ut constabit in figurâ quinquagesimaoctava. Ad faciliorem descriptionem, in parte inferiori paginæ posui vestigium geometricum stylobatæ, in superiori vestigium geometricum cornicis, cum latitudinibus & longitudinibus membrorum singulorum; ut eas transferendo in lineam plani more consueto, utrumque vestigium opticè deformetur. Ad vitandam confusione, prius notare oportet puncta quæ spectant ad membra propinquiora solidò parieti, deinde alia.

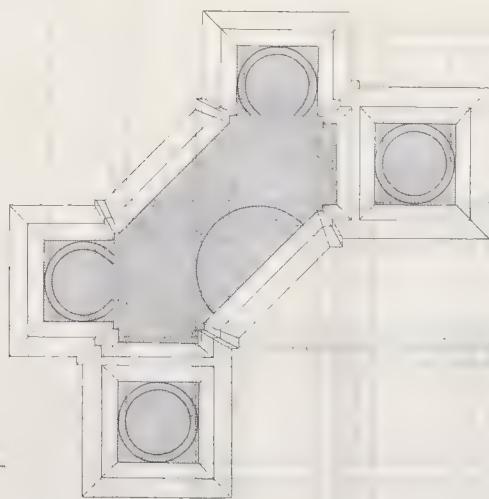
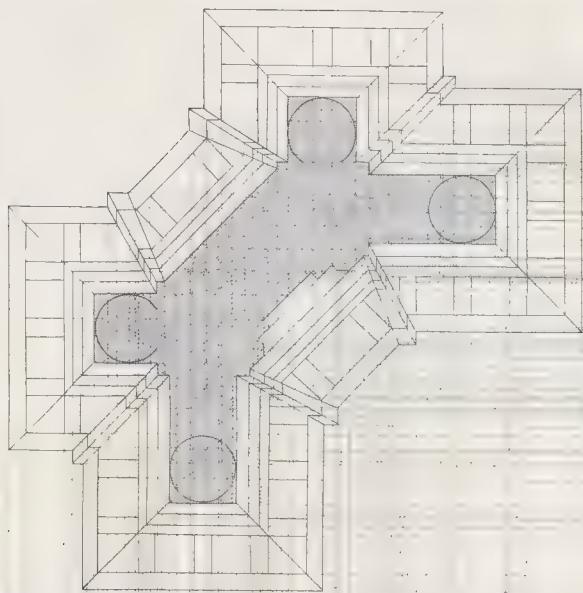
The Fifty-fourth FIGURE.

The Plan of a Design of the Corinthian Order.



EING to describe an Octangular Corinthian Work, I have here inserted the Plan of one Quarter of the Composition; which is vaulted in Form of a Cupola, as is seen in the Fifty-eighth Figure. To render the Plan less confus'd, I have, in the lower part of the Plate, given the Geometrical Plan of the Pedestal; and in the upper part, that of the Cornice; with the Breadths and Lengths of each Member: so that by transferring the same into the Ground-line, after the usual Manner; you delineate each Plan in Perspective. For avoiding Confusion, 't will be requisite first, to transfer the Points of those Members that are next the Solidity of the Wall; and then proceed to the others.

FIG. LIV.





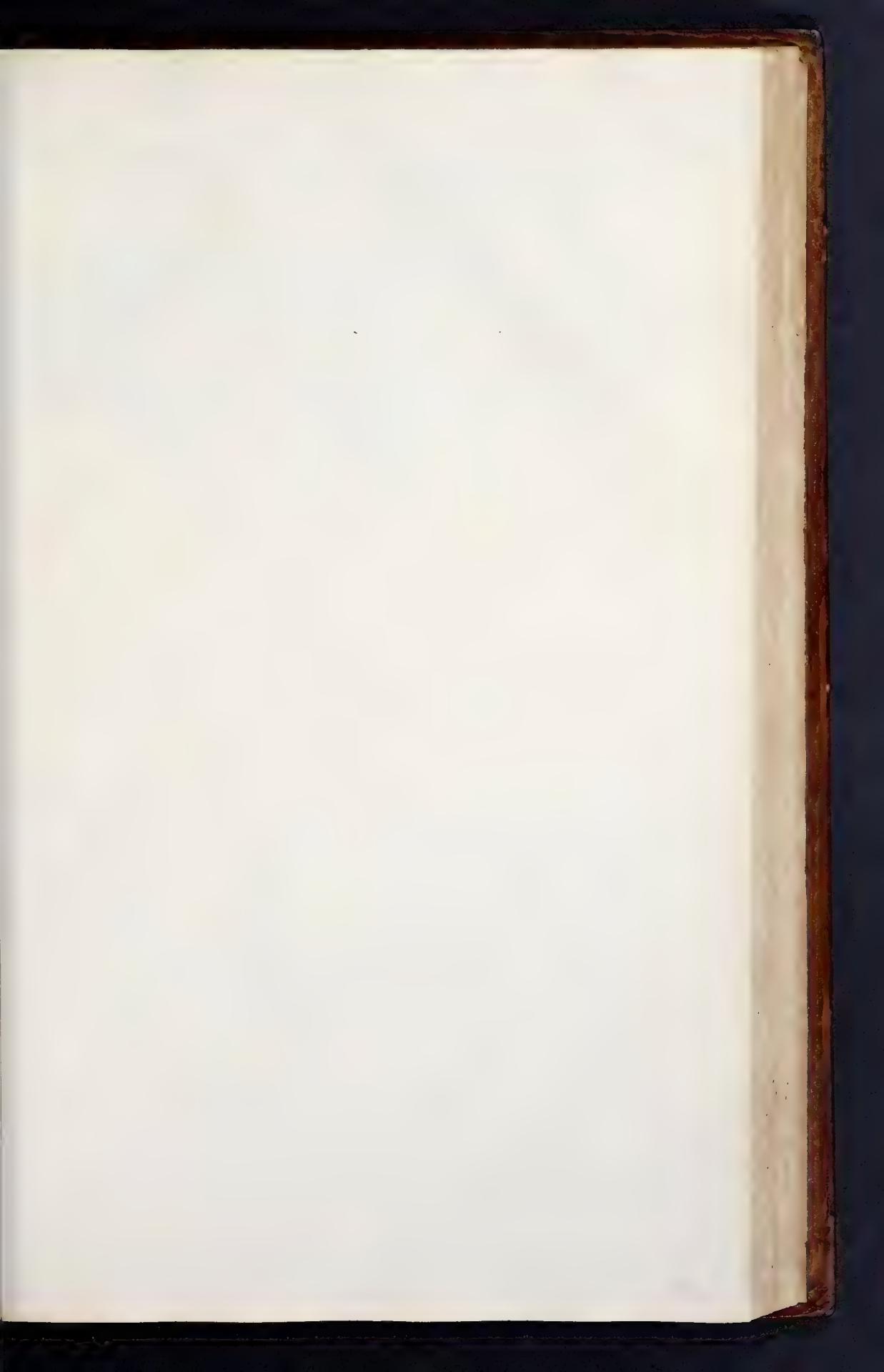


FIG. LV.



FIGURA Quinquagesimaquinta.

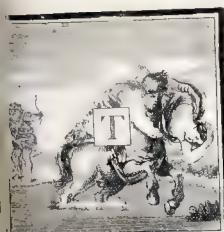
Elevatio ædificii Ordinis Corinthii.



LEVATIO geometrica ædificii octangularis congruit cum duobus ejus vestigiis figuræ antecedentis. Quia verò elevatio parietis abscondit secundam ex quatuor columnis, eademque in ædificio deformato conspicua futura est; siccirkò eam lineis occultis designare oportuit.

The Fifty-fifth FIGURE.

The Geometrical Elevation of a Corinthian Work.



THE Geometrical Elevation of this Octangular Design, is wholly correspondent to the two Plans of the foregoing Figure: But because the Wall in this Upright takes off the Sight from the second of the four Columns, which is notwithstanding visible in the finish'd Perspective that follows; 'tis requisite to delineate the same with occult Lines, as in the Figure.

FIGURA Quinquagesima sexta.

Deformatio vestigiorum & elevationis ædificii
Corinthii.



N hac figurâ, lineam plani coincidere volui cum linea horizontis. Itaque videri non posset vestigium inferius, nisi ut alias deorsum protracti lineam plani, hic è converso sursum promovisset lineam horizontis, quam constitui medianam inter lineas plani utriusque vestigii, ut ambae projectiones essent æquè distinctæ. In elevatione, columnæ secunda, quam, ut dixi, paries abscondit, lineis occultis designata est.

The Fifty-sixth FIGURE.

The Perspective Plans and Upright of the Corinthian Design foregoing.



N this Figure, I have made the Ground-line coincident with that of the Horizon, in which case the lower Plan cant be seen, unless the Ground-line be sunk lower, as before intimated ; or contrariwise, the Point of Sight rais'd higher, as I have here done, keeping it in the midst between the Ground-lines of the two Plans, that the Perspective of both might be equally distinct. In the Elevation, the second Column, which I mention'd to be hidden by the Wall, should be design'd with occult Lines.

FIG. LVI.





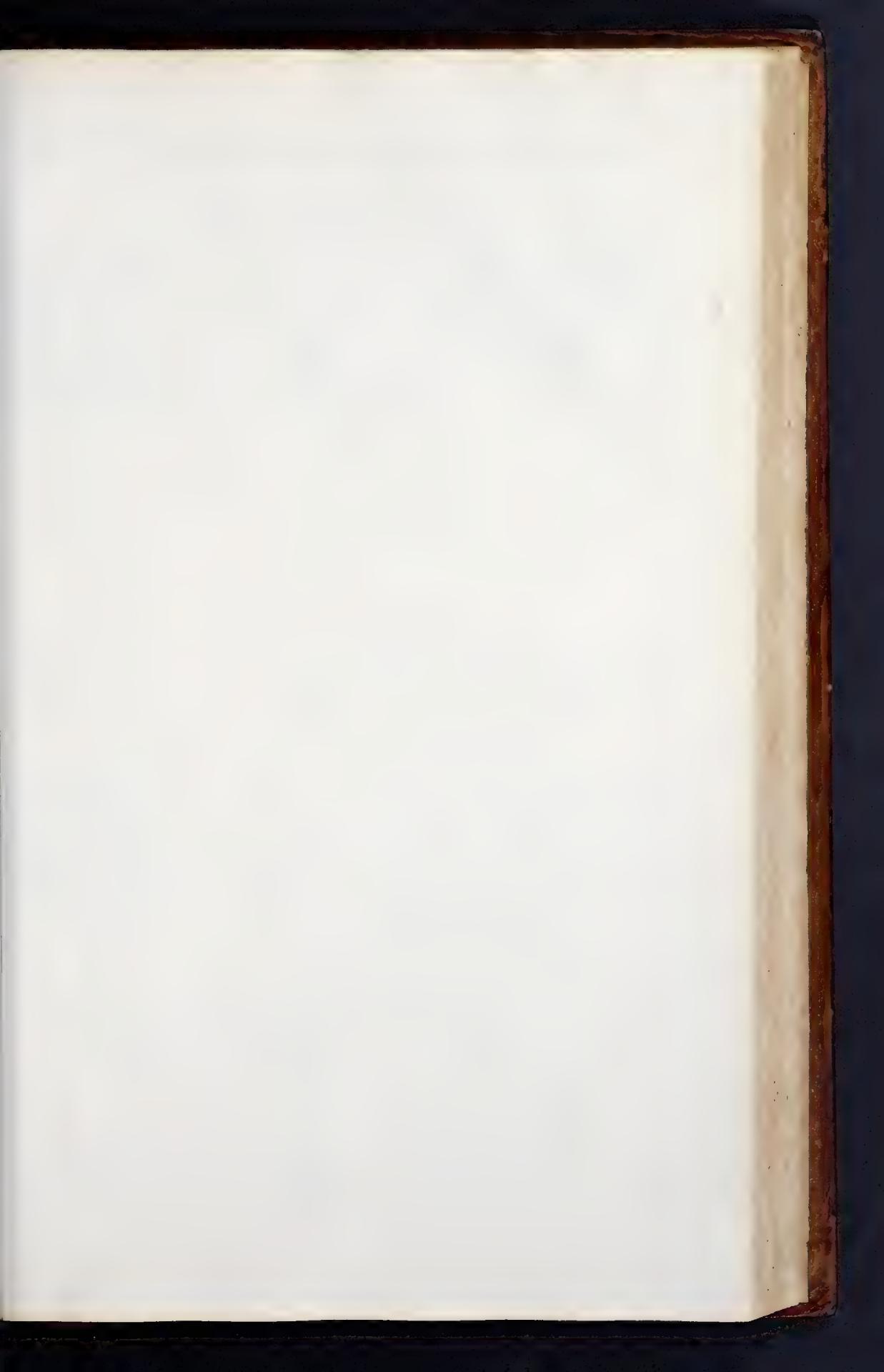


FIG. LVII.

FIGURA Quinquagesima septima.

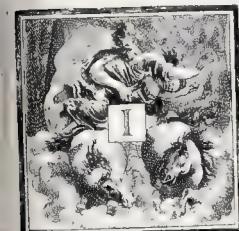
Adumbratio figuræ sequentis.



IGURAM hanc seorsim delineavi, ut videoas quomodo facienda sit operis totius adumbratio, accipiendo altitudines membrorum singulorum ex elevatione; latitudines & longitudines ex vestigiis. Quæ omnia ex diagrammatis inspectione clarissimè apparent.

The Fifty-seventh FIGURE.

The rough Draught of the following Figure.



Have drawn this Figure apart, that you may see the Manner of describing the Out-line of the whole Work, by taking the Heights of the several Members from the Elevation, and their Breadths and Lengths from the Plans; all which is very plain, upon Inspection of the Figure.

FIGURA Quinquagesima octava

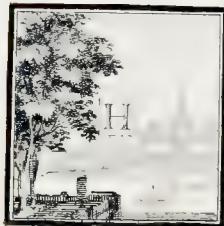
Ædificium Ordinis Corinthii octangulare.



UCUSQUE descripsimus pilas anticas sinistras ædificii Corinthii. En hoc loco medietatem dexteram totius Operis. Integrum vero ædificium habebis figurâ sexagesimâ.

The Fifty-eighth FIGURE.

Part of an Octangular Work of the Corinthian Order.



IT HERETO the nearest left-hand Quarter of this *Corinthian Design* has been described. In this Plate you have the right-hand Half of the whole Work ; and in the Sixtieth Figure, the entire Perspective compleat.

FIG. LVM.



FIGURA Quinquagesima octava

Ædificium Ordinis Corinthii octangulare.



UCUSQUE descriptissimus pilas anticas sinistras ædificii Corinthii. En hoc loco medietatem dexteram totius Operis. Integrum verò ædificium habebis figurâ sexagesimâ.

The Fifty-eighth FIGURE.

Part of an Octangular Work of the Corinthian Order.



IT HERETO the nearest left-hand Quarter of this *Corinthian Design* has been describd. In this Plate you have the right-hand Half of the whole Work ; and in the Sixtieth Figure, the entire Perspective compleat.

FIG. L V I I .





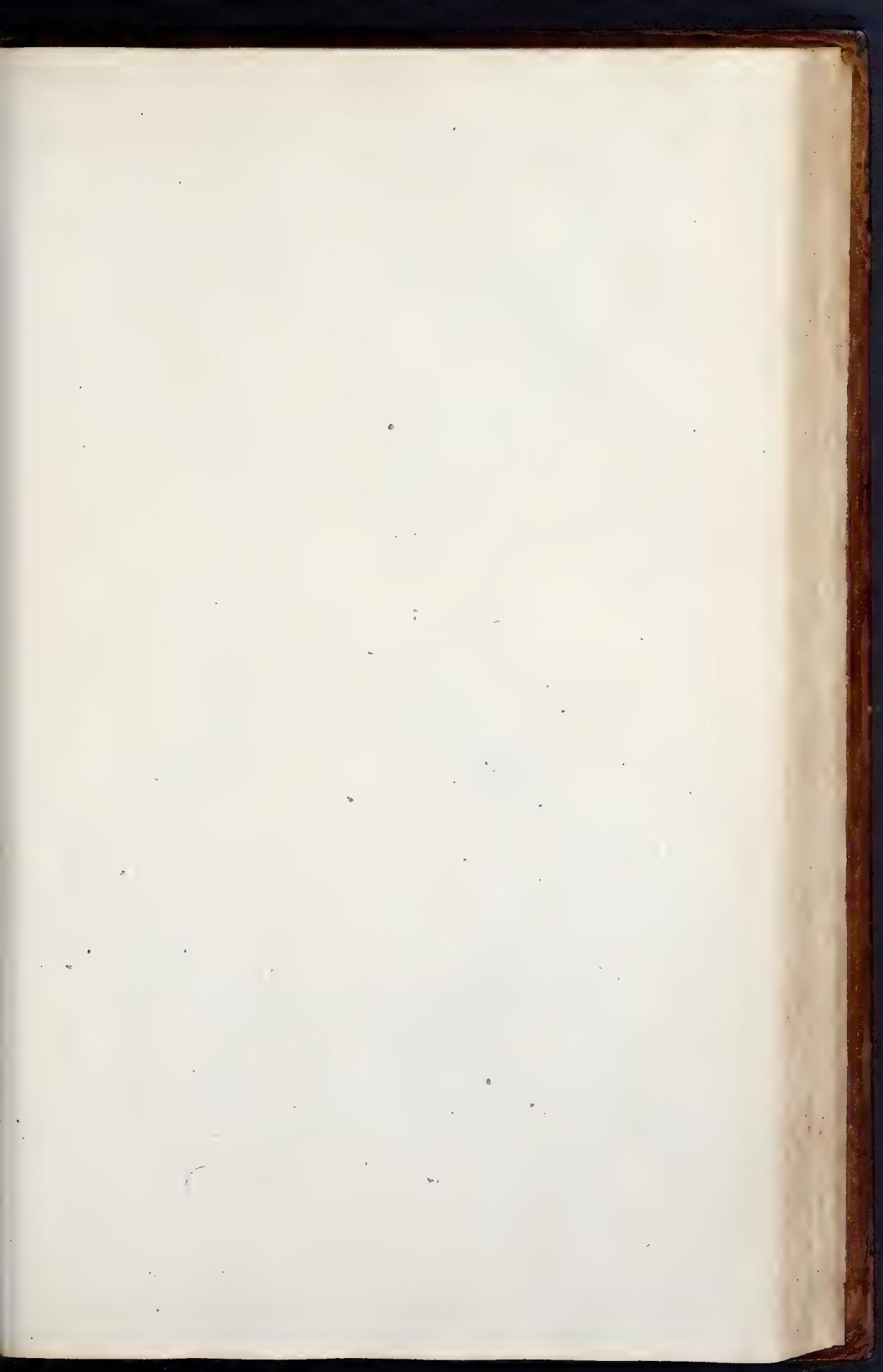


FIG. LIX.

c



I

E

B

F

D



A

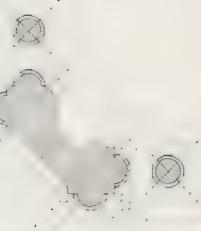


FIGURA Quinquagesimanona.

Vestigia tabernaculi octangularis.



PROJECTIONES rerum octangularium sunt quadratis difficiliores : ideo in eis explicandis diligentiae non pepercit. Moles cuius vestigia vides in A & B, convenit in multis cum eâ quam ereximus figurâ quinquagesima octauâ. Visualis CD recipit sectiones perpendicularium, quæ deserviunt pro elevatione figuræ sequentis, ut sepius dictum est. Si facies interior delineanda sit seorsim à facie anteriori, illam perficies ope linearum CE, istam ope linearum FD.

The Fifty-ninth FIGURE.

The Plans of an Octangular Tabernacle.



CTANGULAR Figures being more difficult to be put in Perspective, than the Square ; I shall use my best Endeavours to render the Method as plain as possible. The Composition whose Plans you see in A and B, has much Affinity with that describ'd in the Fifty-eighth Figure. The Visual CD receives the Sections, from which Perpendiculars are rais'd for the Elevation and Profile of the following Figure, as has been often said. If you would delineate the Back-part separate from the Fore-part, you may do the former by means of the Line CE, and the latter by that of FD.

FIGURA SEXAGESIMA.

Tabernaculum octangulare.



OC tabernaculo aliquoties usus sui pro expositiōne quadraginta horarum. Si colores scitē inducti fuerint in duos ordines telariorum, resectis omnibus quae ad molem ipsam non pertinent; spectatoribus imponet, & solida videbitur. Oportebit autem exemplar externae faciei eruere ex parte DF vestigii & elevationis; exemplar interioris facie eruere ex parte EC, servando in omnibus regulas quas hucusque tradidimus.

The SIXTIETH FIGURE.

An Octangular Tabernacle in Perspective.



Have sometimes made use of this Tabernacle for the Exposition of the *Forty Hours*. If the Colours are laid by a skilful Hand, on two Ranges of Cloth, and the Frame cut away according to the Out-line of the Work, they will wonderfully deceive the Eye, and appear as solid; but then the outer Range must be drawn after the Plan and Elevation of the Part DF in the foregoing Figure; and the inner Range after that of EC; in all things observing the Rules hitherto deliver'd.

FIG. LX.





FIG. LXI.



FIGURA Sexagesimaprima.

Modus erigendi machinas, quæ constant pluribus ordinibus telariorum.



X figuræ inspectione addisces modum erigendi machinæ quæ constant pluribus ordinibus telariorum. Tabernaculum hoc nostrum indiget duobus tantum ordinibus; nam telaria propinquiora oculo exprimit faciem externam, remotiora exhibent faciem internam. Ne autem lateant stipites quibus telaria sustinentur, medietatem telariorum adumbrare omisimus. Recta LS est linea plani, recta DG est linea horizontalis; ac punctum distantia quod cadit extra paginam in recta CG prolongata, debet esse remotum à puncto C, quantum in superiori parte figuræ quinquefimana, punctum distantia est remotum à puncto oculi. Eadem horizontalis DG secatur normaliter in C à recta EF, quæ est sectio externæ faciei tabernaculi, & ex C incipiunt divisiones in partes æquales pro reticulatione anterioris faciei telariorum, ut dicemus figuræ sexagesimasecunda. Recta IL quæ est sectio internæ faciei tabernaculi, distat ad libum à recta EF cui est parallela. Porro, per divisiones rectæ EF (ut vides in M, N, O) ex puncto distantia ducendæ sunt visuales ad rectam IL pro reticulatione aliorum telariorum: distantia enim DC facit ut augere oporteat ea qua in telariis pinguntur, alioquin justa minora viderentur. Atque hinc dignosces, cur arcus qui in telariis anterioribus pertingeret solum ad B, in posterioribus elevetur usque ad H.

Figura sequenti proponemus modum delineandi faciem internam telariorum, adhibita reticulatione externæ faciei: ad intelligentiam verò illius methodi, fiat in hac figurâ recta HP parallela ad DC, ac recta BC dividatur in totidem partes æquales, in quo partes divisa fuerit recta PC.

The Sixty-first FIGURE.

The Manner of erecting Machines, that consist of several Ranges of Frames.

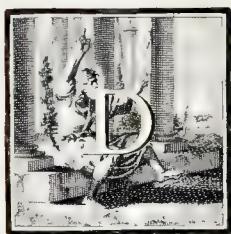


Y casting your Eye on the Figure, you 'll readily apprehend the Manner of erecting the several Ranges of Frames. This Tabernacle last describ'd needs only two of them; the Frame next the Eye represents the outer Face, and the hinder Frame the inner Face thereof. I have here describ'd but the Half-Breadth of the said Frames, that you might have a Sight of the Poles and Braces which support them. The Line LS is the Line of the Plan, or Ground-line; the Line DG is that of the Horizon; and the Point of Distance, which falls without the Page CG prolong'd, is as far from the Point C, as the Point of Distance is from the Point of Sight in the upper Part of the Fifty-ninth Figure. The Horizontal DG is cut perpendicularly in C by the Line EF, which is the Section of the outer Face of the Tabernacle; and from the Point C begin the equal Divisions for the Net-work of the foremost Frame, as is shewn in the Sixty-second Figure. The Line IL, which is the Section of the inner Face of the Tabernacle, may at pleasure be set nearer or farther from the Line EF, to which it is parallel. By the Divisions of the Line EF (as M, N, O) Lines are drawn from the Point of Distance to the Perpendicular IL, for the Net-work of that Frame; for the Distance DC obliges the Parts of D to be painted larger, otherwise they will appear les than they really ought. And from hence you may discern, why the Arch, which in the foremost Frame would reach only to B, does in the hindmost rise up to H.

In the following Figure is shewn the Manner of delineating the inner Frame, from the Net-work of the outer Face; for the better understanding of which, make the Line HP in this Figure parallel to DC, and let the Line BC be divided into as many equal Parts, as the Line PC was.

FIGURA Sexagesimafsecunda.

De reticulandis telariis, quæ repræsentent ædificia solida.



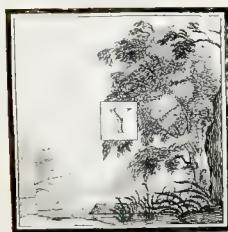
UO exemplaria tabernaculi qua seorsim delineanda sunt, conjunctim habes in A. Utique deinceps eadem reticulatio, quam suis numeris infigitur. Postquam ergo designaveris amplitudinem totius aditicii, cum proportione ad ipsam reticulabis pavimento B aule cuiusdam quod capiat rem totam, acripis eisdem numeris quos habet exemplar: ejusque retis ope, ducentur in pavimento linea terminative totidem membrorum, quo futura fuit tertia exprimita faciem externam tabernaculi. Ubi hec parata fuerint, singula disponetur exinde suis locis in ipsum pavimento; ac funiculis colore nigro immitis, repetetur in telariis eadem reticulatio, additis ad libitum pluribus visualibus; quarum adjumento dum seorsim pingantur telaria, duci queat recte tendentes ad punctum oculi seu perspective. Atlia quoque reticulatio super pavimento necessaria est pro internâ facie tabernaculi: ac duas reticulationes pavimenti eam inter se proportionem habebunt, quam habent divisiones reticulorum IL, EF, figura sexagesimaprime. Hujus retis duco fient linea terminativa telariorum cum reliquis, ut iam indicavimus.

Juxta hanc methodum nequeunt duci linea terminative interioris faciei, nisi fiat in pavimento aliud rete delecto priori, quod esset valde laboriosum. Postquam ergo ex vestigio figure quinquagesimana cruta sint duo exemplaria, in exemplari faciei externe transferatur recta PC figura sexagesimaprime, in exemplari faciei interna transferatur recta BC. Si autem recta PC divisa fuerit in quindecim partes aequales, dividetur BC in quindecim partes aequales, atque ope harum divisionum reticulare oportebit utrumque exemplar. Porro licet quadrata in reti exemplaris faciei externa sint majora quadratis exemplaris interne faciei, nihilominus idem rete pavimenti deinceps pro ducentis lineis terminativis utriusque faciet. Quadipla sunt de duabus exemplaribus, valent de aliis quotunque. Exempli gratia; si confruere placet quinque ordines interiorum, fient quinque exemplaria in papyro. Si in omnibus exemplaribus usurpetur eadem reticulatio, in pavimento facero eportet quinque diversas reticulationes. Si autem in exemplaribus fiant quinque diverse reticulationes, in pavimento sufficiunt tres.

Curandum est ut singula retis quadrata in telariis sint exacta, omnesque illorum anguli sint recti. Modus expeditissimus faciendo angulos rectos est hujusmodi. Posito uno cruce circini in punto F linea recta EF, alioquin cruce posito u'libre in O, fiet circulus GFI, & ex punto G diameter GI. Si recta HF transeat per puncta I & F, est normalis ad EF.

The Sixty-second FIGURE.

Of making the Net-work on Frames, for representing the Architecture as solid.



OU have jointly in A, the two Designs of a Tabernacle, which are to be drawn separately; the same Net-work serving for both, which is also mark'd with Numbers.

When you have therefore resolv'd on the Size of your Work, on the Pavement of

some Room capacious enough make a Net-work anfwerable, and affix thereto the

Numbers, as in your Copy: By the Help of which, you may on the Pavement de-

scribe the Out-line of all those Members that are requisite to the outer Frame of the

Tabernacle. This being done, let the Frame be laid exactly in its place on the said

Pavement, and with a black Line strike thereon the same Net-work; adding as many visual Lines as you please, which will be of Use for drawing Lines to the Point

of Sight, when you come to paint the Frames asunder. Another Net-work on the

Pavement is also necessary for the inner Face of the Tabernacle, which should bear such

Proportion to this, as the Divisions of the Line IL do to those of EF in the Sixty-

first Figure; and by this means the Out-lines of the inner Frame, &c. may be drawn, as has been shewn already.

I thus the Our-line of the inner Face can't be describ'd, without rubbing out the first Net-work, and making a second on the Pavement; which would be very troublesom. Wherefore, from the Plan of the Fifty-ninth Figure, take the two Designs, and transfer the Line PC of the Sixty-first Figure on the outer Face, and the Line BC on the inner Face. Then if PC were divided into fifteen equal Parts, BC shall be divided in the same manner, and by these of Divisions make the Net-work on each Design. And although the Squares of the outer Face be larger than those of the inner one, the same Net-work may nevertheless serve for giving the Out-line of both. What has been said of these two Designs, may be understood of many. For Instance; if five Ranges of Frames were requir'd, five Designs must be made in Paper. If in all the Designs the same Net-work be us'd, then five several Net-works must be

made on the Pavement; but if the Designs have five different, then one Net-work on the Pavement will suffice.

You must be very careful that all the Squares of the Net-work be exactly divided, and at right Angles. The ready way of making a right Angle is thus: Placing one Foot of the Compasses in the Point F of the Line EF, and

the other at pleasure in O, describe the Circle GFI; and from the Point G draw the Diameter GI. The Line FH

drawn by the Points FI, shall be perpendicular to FE.

FIG. LXII.





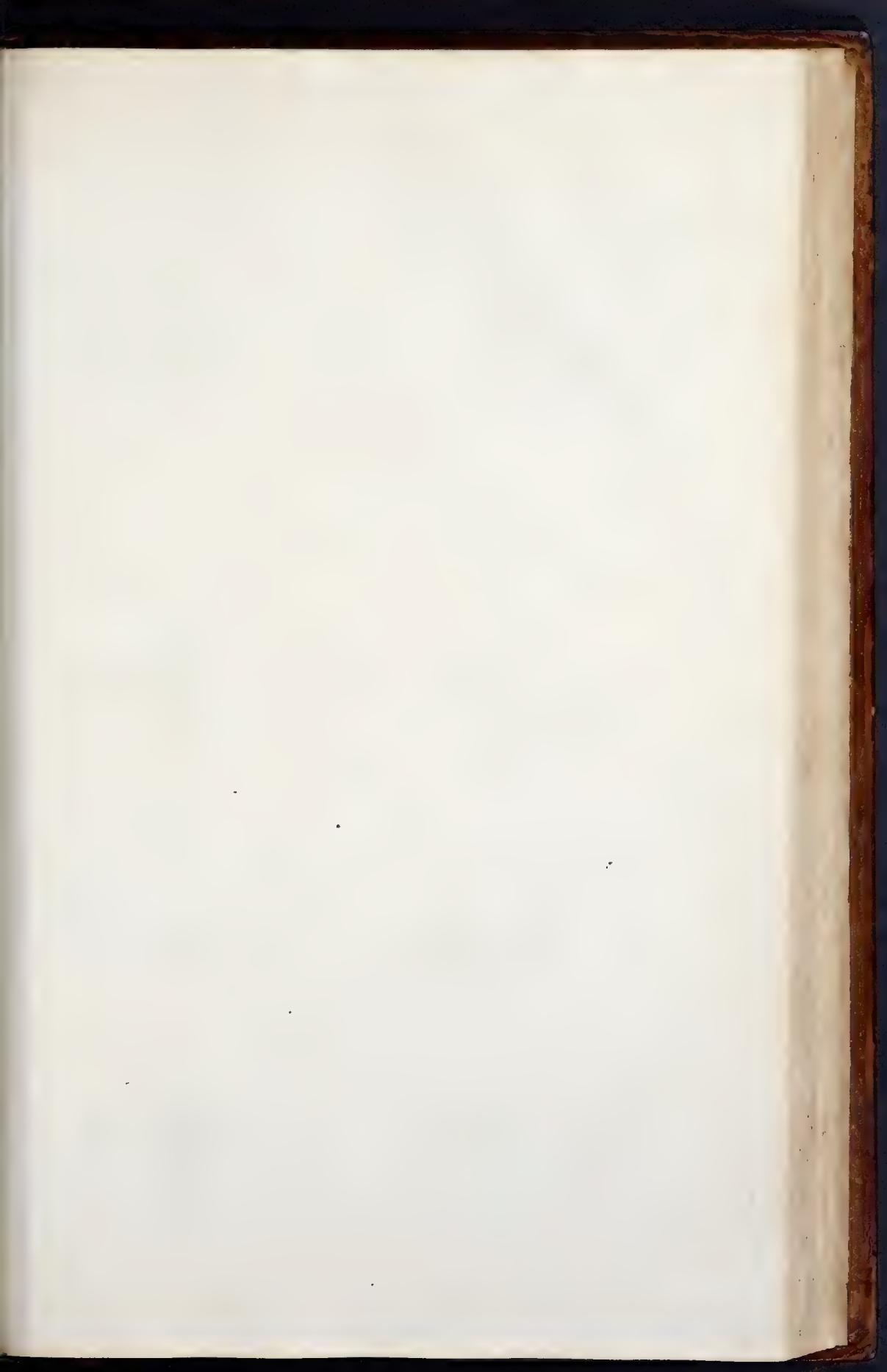


FIG. LXIII.

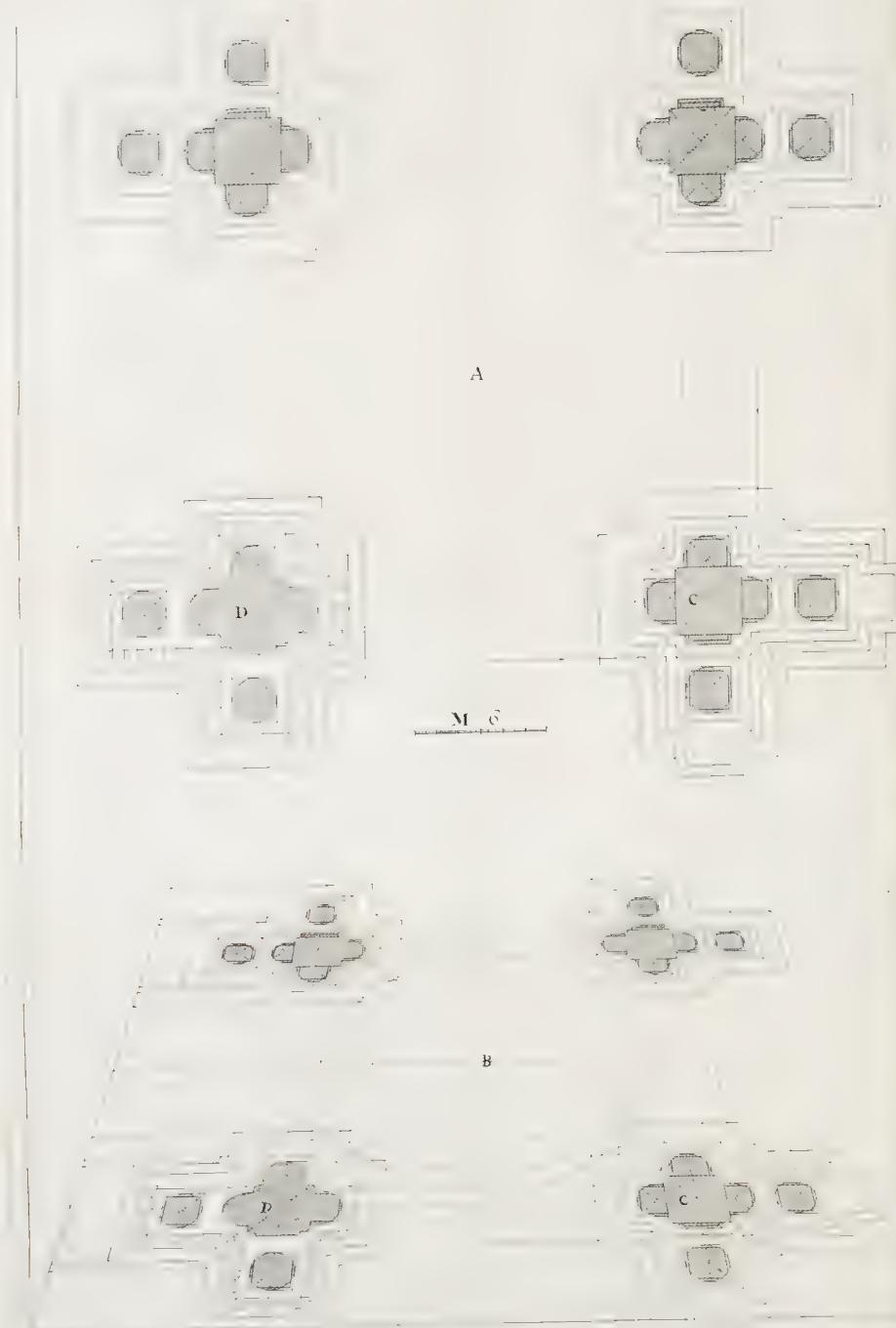


FIGURA Sexagesimatercia.

Vestigia ædificii quadrati.



ESTIGIUM geometricum A hujus ædificii habet in B suam deformationem. Discrimen inter pilas C & D oritur ex eo, quod in C posita sunt vestigia stylobatarum, in D autem posita sunt vestigia cornicum.

The Sixty-third FIGURE.

The Plan of a square Design.



THE Geometrical Plan of this Design A, is brought into Perspective in B. The Difference between the Parts C and D arises from hence, that the Plan of the Pedestal's is plac'd in C, and that of the Cornice in D.

FIGURA Sexagesimaquarta.

Ædificium quadratum.



X deformatione vestigii & elevationis, methodo consuetâ eruitur imago totius ædificii, quæ potest esse exemplar aræ maximæ alicujus Ecclesiae. Hanc machinam, non sine communi approbatione, aliquoties adhibui, in apparatu quadraginta horarum; locum in medio vacuum occupantibus Angelis cum nubibus, additâ figuraru[m] aliquot copiâ in parte inferiori. Modus faciendi in telariis remotioribus ab oculo partem tholi rotundi quam hic vides, deducitur ex iis quæ tradidimus in projectione circulorum.

The Sixty-fourth FIGURE.

A square Design in Perspective.



ROM the Plan and Upright in Perspective this finish'd Piece of the whole Work is delineated after the usual Manner, and may serve for the Design of a great Altar in a Church. I have sometimes, for the Solemnity of the *Forty Hours*, expos'd this painted on a Machine, with an universal Satisfaction; Angels with Clouds possessing the higher part of the Hemisphere within, and Groups of Figures the lower part. The Manner of designing on the inner Frame, that part of the said Cupola which you here see, is deduc'd from what has been before said of putting Circles into Perspective.

FIG. LXIV.







FIG. LXV

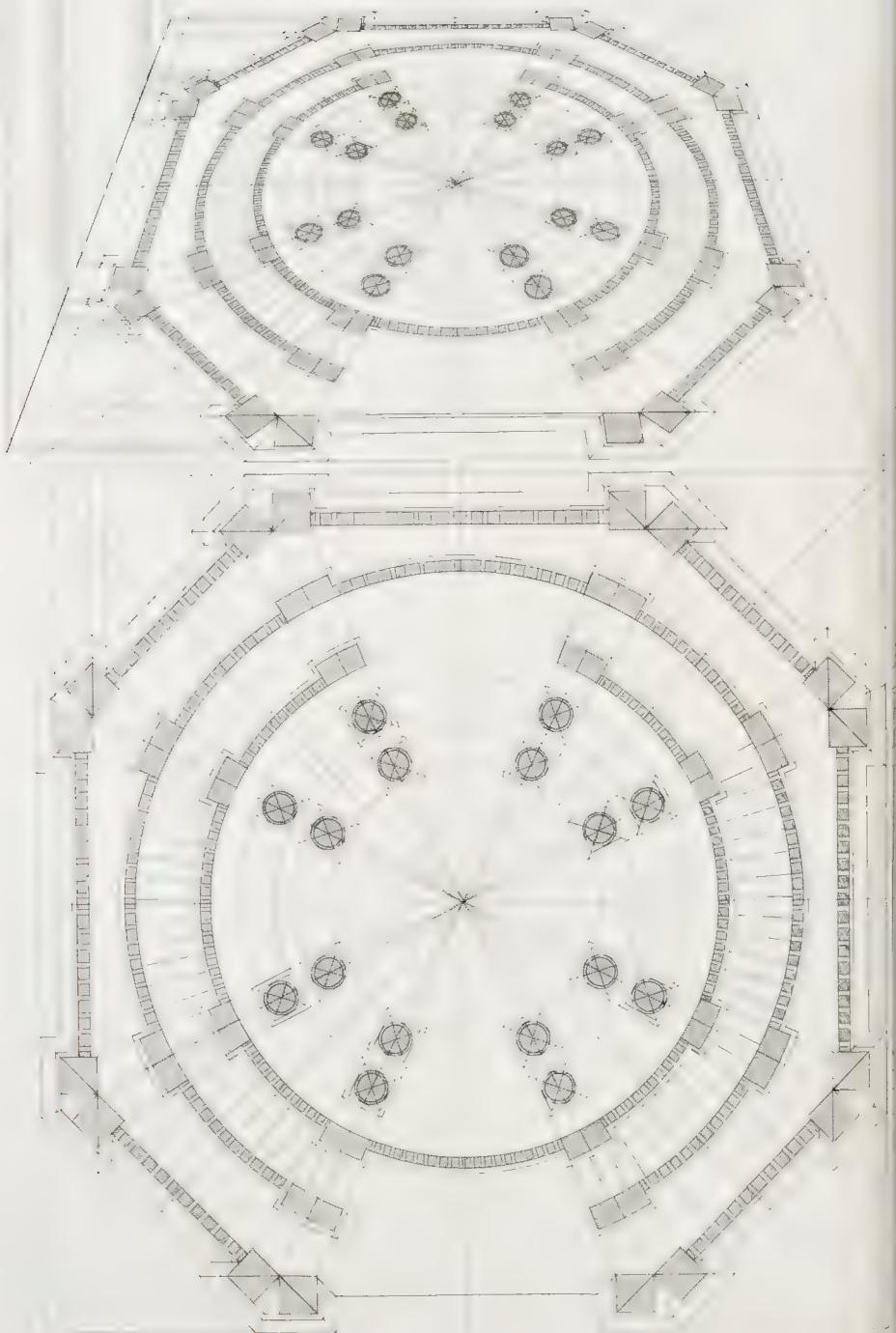
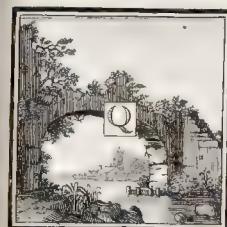


FIGURA Sexagesimaquinta.

Vestigium ædificii rotundi opticè imminutum.



UI sedulam operam in circuitis deformandis non posuerint, eosque minimo negotio ex usu describere nequierint, frustra conabuntur projicere vestigia ædificiorum rotundorum. Ad vitandum confusionem, proderit in vestigio notare primum lineas occultas membrorum præcipuorum; iisque translatis in elevationem, addere sensim reliquas. Hac industria ego ipse in hoc schemate usus sum. Quum autem experientio didicerim summam arduitatem harum descriptionum, aliam regulam adhibere jamdiu cœpi, quam, ut supra diximus, in aliud Opus reservamus.

The Sixty-fifth FIGURE.

The Plan of a Circular Work in Perspective.



HEY that have not diligently apply'd themselves to the putting Circles into Perspective, and, by a constant Practice, render'd the Work familiar to them, will in vain attempt that of the Plans of round Buildings. To prevent Confusion, you'll do well, first to mark the occult Lines of the principal Members; and after those are transferr'd into the Upright, then proceed to the rest, as I myself did in this Figure: But having found by Experience, the great Difficulty of describing these round things, I have long since made use of another Method, which, as I said before, is reserv'd for another Volume.

FIGURA Sexagesimafesta.

Projectio ædificii rotundi.



PRIFICE oculis imponunt imagines rerum rotundarum, si omnibus refectis quæ ad eas non pertinent, exactè delineatae ac depictæ fuerint. Hanc figuram ex vestigio eruere oportebit methodo consuetâ, eamque in Templo S. Ignatii Collegii Romani construxi pro feriâ V & VI Hebdomadæ sanctioris. Intra arcum, super altari, locus erat urnæ sepulcrali, cum Venerabili Sacramento. Sub altari visebatur simulacrum Christi Domini è Cruce depositi: in medio columnarum, imago Beatae Virginis dolentis; super balaustris Angeli lugentes, cum instrumentis cruciatuum Salvatoris.

The Sixty-sixth FIGURE.

A Circular Design in Perspective.



Blessed Virgin in extreme
memento of the Passion.

HE Appearance of round things, if well design'd, masterly painted, and the Frame cut away to the Out-line of the Work, do wonderfully deceive the Eye. This Figure is drawn from the Plan, as usual; and was put in execution by me, in the Church of S. Ignatius of the Roman College, for the Thurday and Friday of the Holy Week. Within the Arch, on the Altar, was plac'd a sepulchral Urn containing the Holy Sacrament. Beneath the Altar was laid a Figure of our Saviour Christ taken down from the Cross. In the midst of the Tambour, was a Picture of the Sorrow; and on the Ballustrade, Angels mourning, bearing the Instruments of the Passion.

FIG. LXVI.







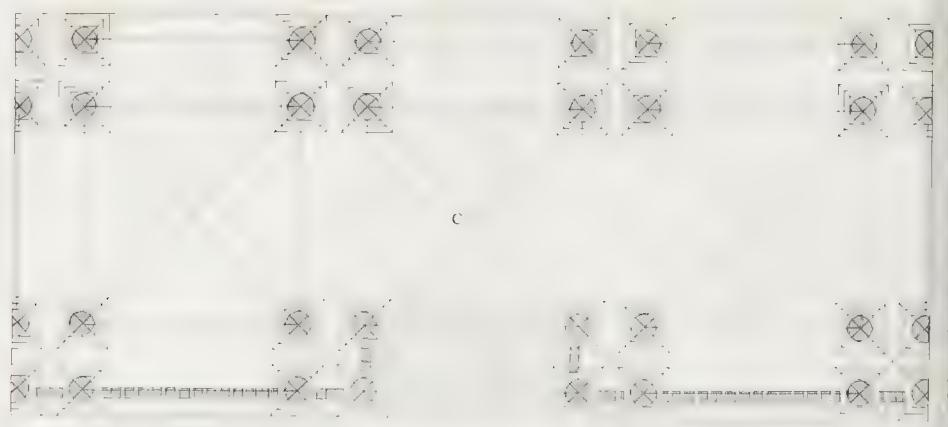


FIG. LXVII.—(See page 110 for description of the individual diagrams.)

FIG. LXVII.

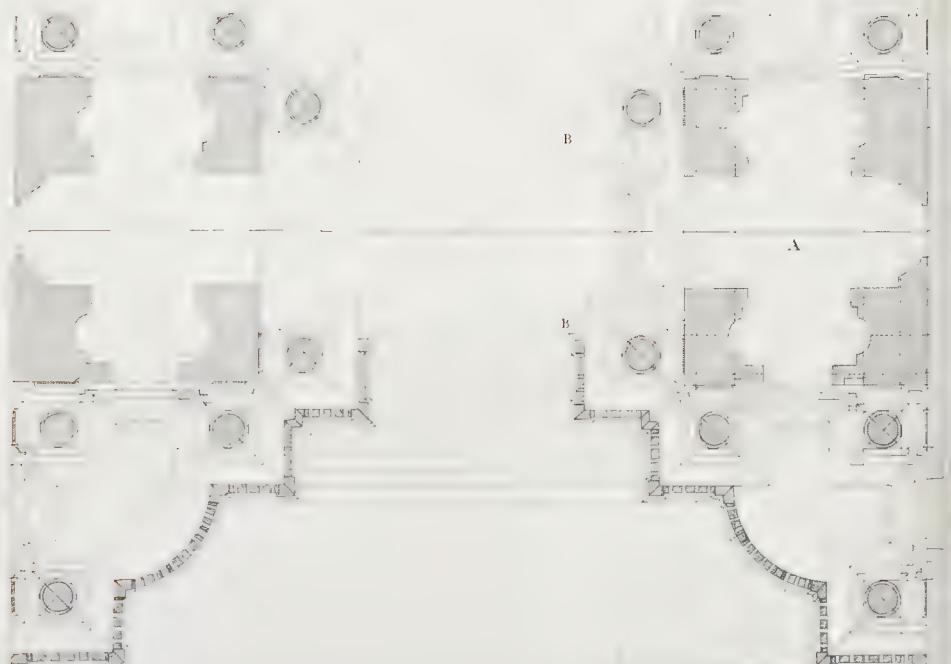


FIGURA Sexagesimaseptima.

Vestigium geometricum, ac prima præparatio ad figuram septuagesimamprimam.



GRECIAM adeò speciem præstulit, atque oculis adeò imposuit machina quam construxi anno 1685, pro supplicatione quadraginta horarum, in Templo Urbis Farnesiano, ut decreverim satisfacere Studioſis, publici juris faciendo non modò imaginem totius ædificii, sed etiam illius vestigia & elevationes: qua omnia eâ diligentia delineavimus, veluti Opus ipsum non pennicillo colorandum, sed lapidibus extruendum fuisset. Spatia nigrantia soliditatem designant parietum & columnarum. Ceteræ lineaे sunt crepidines stylobatarum & coronicum. Initium delineationis fiet ab iis membris, ex quibus oriuntur lineaे occultæ posita in A, (que autem dicuntur de hac medietate, intelligi debent de aliâ) ne multitudine linearum confusiorum paret. In B linea curva occultæ sunt vestigium tholi qui compleat summitetum ædificii. Vestigium C exhibet amulacrum interius. Omisimus autem vestigium theatri, quia paginae angustia illud non capit.

The Sixty-seventh FIGURE.

The Geometrical Plan, and first Preparation to the Seventy-first Figure.



THE Machine which I erected in the Year 1685, in the Church Farneze, or Jesuits Church at Rome, for the Devotions of the *Forty Hours*; had so admirable an Effect, and so pleasantly deceiv'd the Eye, that I resolv'd to gratify the Studioſis, not only with a general View, but with the Plan and Elevation thereof; all which was perform'd with such Exactness, that the Work itself seem'd rather to consist of solid Stones, than to be wrought by the Painter's Hand. The hatch'd Part denotes the Solidity of the Walls and Columns. The other shews the Breaks and Projeſtures of the Pedestals and Cornices. Lest many Lines should cause Confusion, begin with those Members, which produce the occult Lines on the Side A; understanding the same also of the other half. In B the occult curv'd Lines are the Plan of the *Cupola* which crowns this Structure. The Plan C is that of the inner Vestibule, but that of the Theater is here omitted, through Want of Room in the Page.

FIGURA Sexagesima octava.

Elevatio geometrica vestigii præcedentis, & secunda præparatio ad figuram septuagesimam primam.



N hoc schemate habes elevationem ædificii seclam in longum, quam figurâ septuagesimâ optice projiciemus: eisdemque membris constanter videbis elevationem deformatam, quibus constat elevatio geometrica. Hinc disces ad excogitandas hujusmodi machinas, eandem Architecturæ scientiam in Pictore necessariam esse, quæ ad construendas solidæ ædificia exigitur in Architecto.

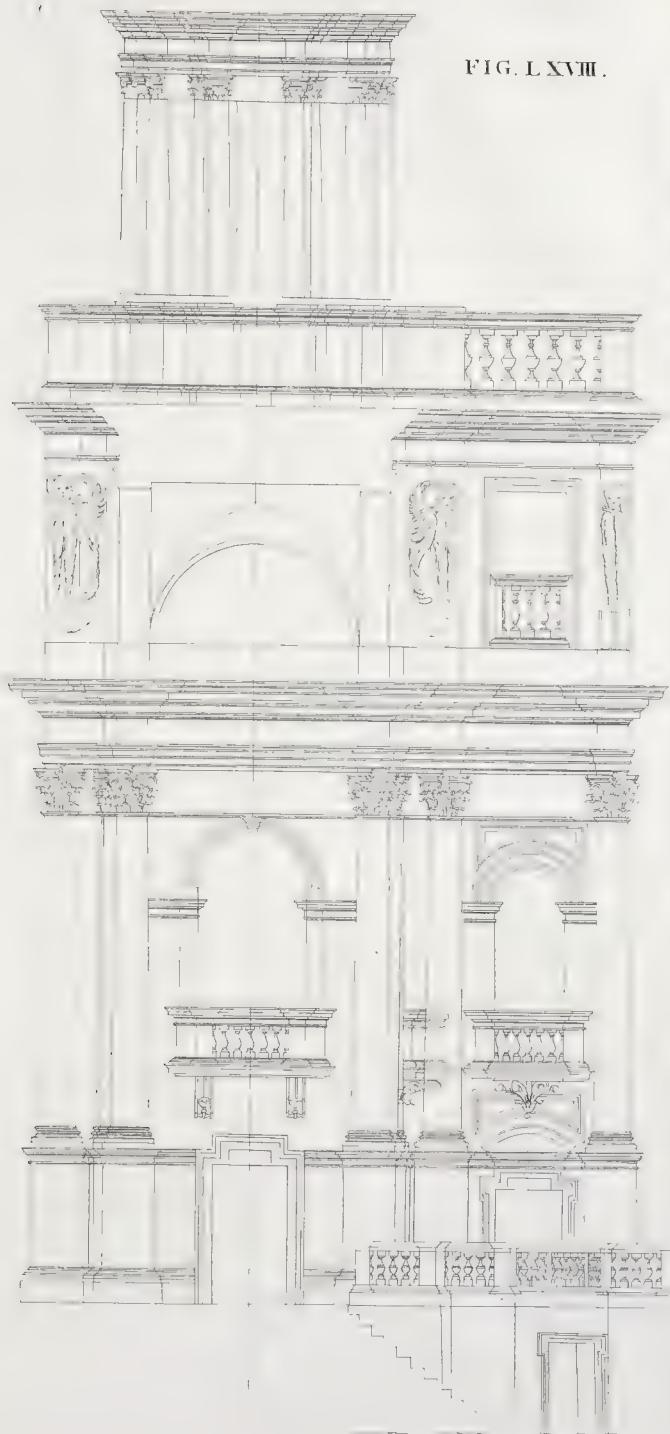
The Sixty-eighth FIGURE.

The Geometrical Elevation of the foregoing Plan, and second Preparation to the Seventy-first Figure.



In this Figure you have the Elevation of the aforesaid Structure dissected lengthwise; the Perspective thereof is described in the Seventieth Figure; and you may observe that both of them consist of the same Members: whence you may perceive, that for designing things of this kind, the Painter ought to have no less Skill in Architecture, than is required for the Execution of solid Works.

FIG. LXVIII.



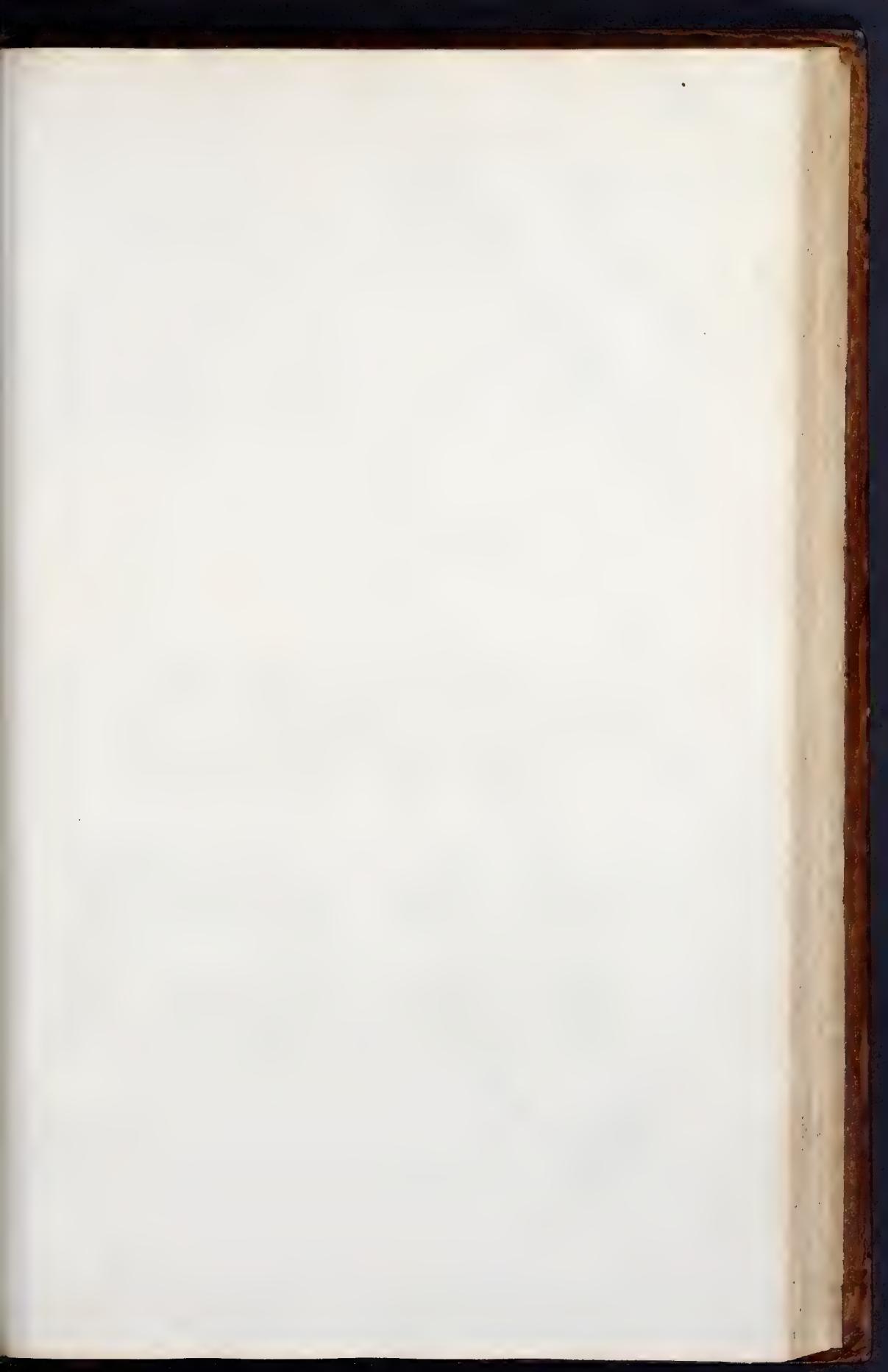


FIG. LXIX.

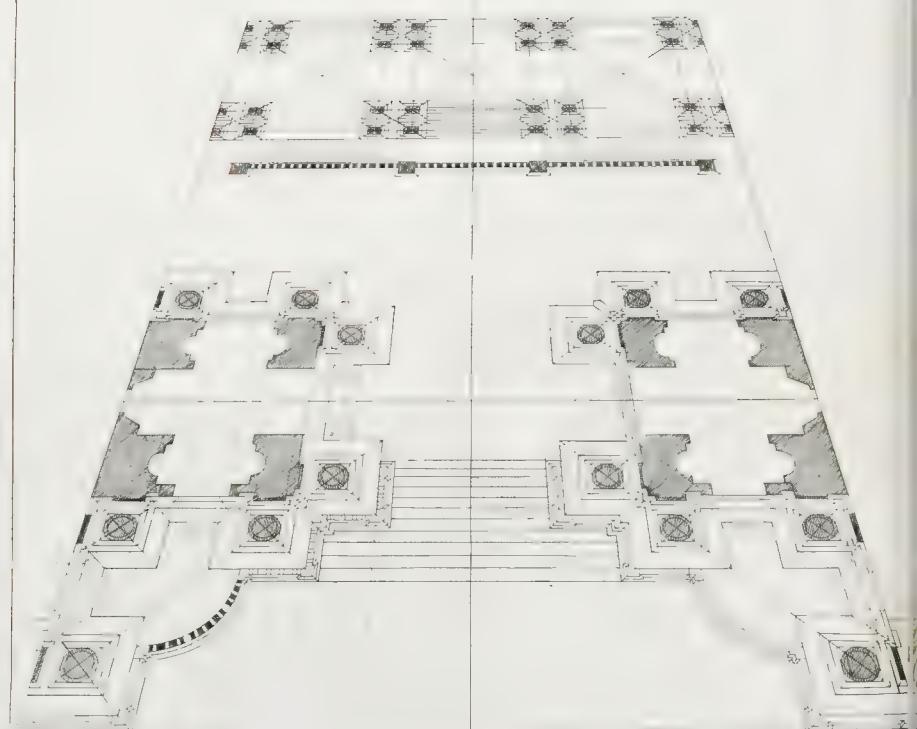


FIGURA Sexagesimanona.

Deformatio vestigii figuræ sexagesimæseptimæ, & præparatio tertia ad figuram septuagesimamprimam.



ARTIFICIUM projectionis vestigii hujus, explicatum à nobis est figurā quadragesimæsecundā. Nimirum, ut parallelæ sint invicem distantiores, lineam plani deorsum protractimus, ut ex intuitu figuræ statim cognosces.

The Sixty-ninth FIGURE.

The Plan of the Sixty-seventh Figure in Perspective, and third Preparation to the Seventy-first Figure.



HE Artifice us'd in projecting the Perspective of this Plan, has been already shewn in the Forty-second Figure; namely, that for giving the greater Distance between the Parallels, the Ground-line is drawn much lower than its true Place; as is manifest on Inspection of the Figure.

FIGURA SEPTUAGESIMA.

Deformatio elevationis figuræ sexagesimæ octavæ, & præparatio quarta ad figuram septuagesimam primam.



UÆ dicta sunt de projectione vestigii nostri ædificii, habent locum in elevatione. Nimirum, ut parallelæ invicem notabiliter distarent, usi sumus industriâ quam declaravimus figurâ quadragesimæ secundâ.

The Seventieth FIGURE.

The Perspective of the Elevation of the Sixty-eighth Figure, and the fourth Preparation to the Seventy-first Figure.



HAT has been said of the Perspective-Plan of this Structure, is also here practis'd in the Elevation ; namely, that the Parallels might be sufficiently distinct, the Perpendiculars are drawn more remote from the Point of Sight, as was shewn in

the Forty-second Figure.

FIG LXX



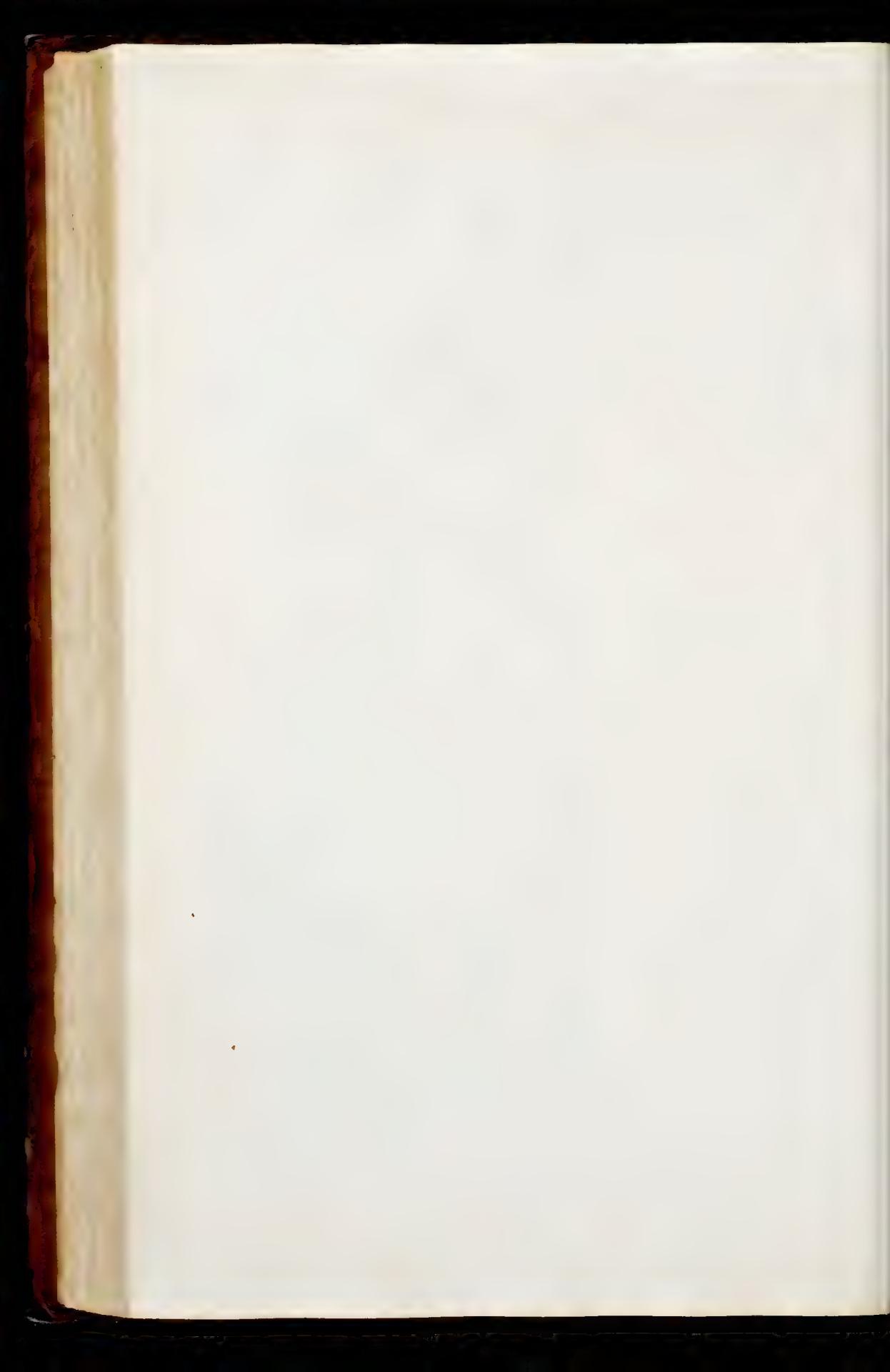




FIG. LXI.

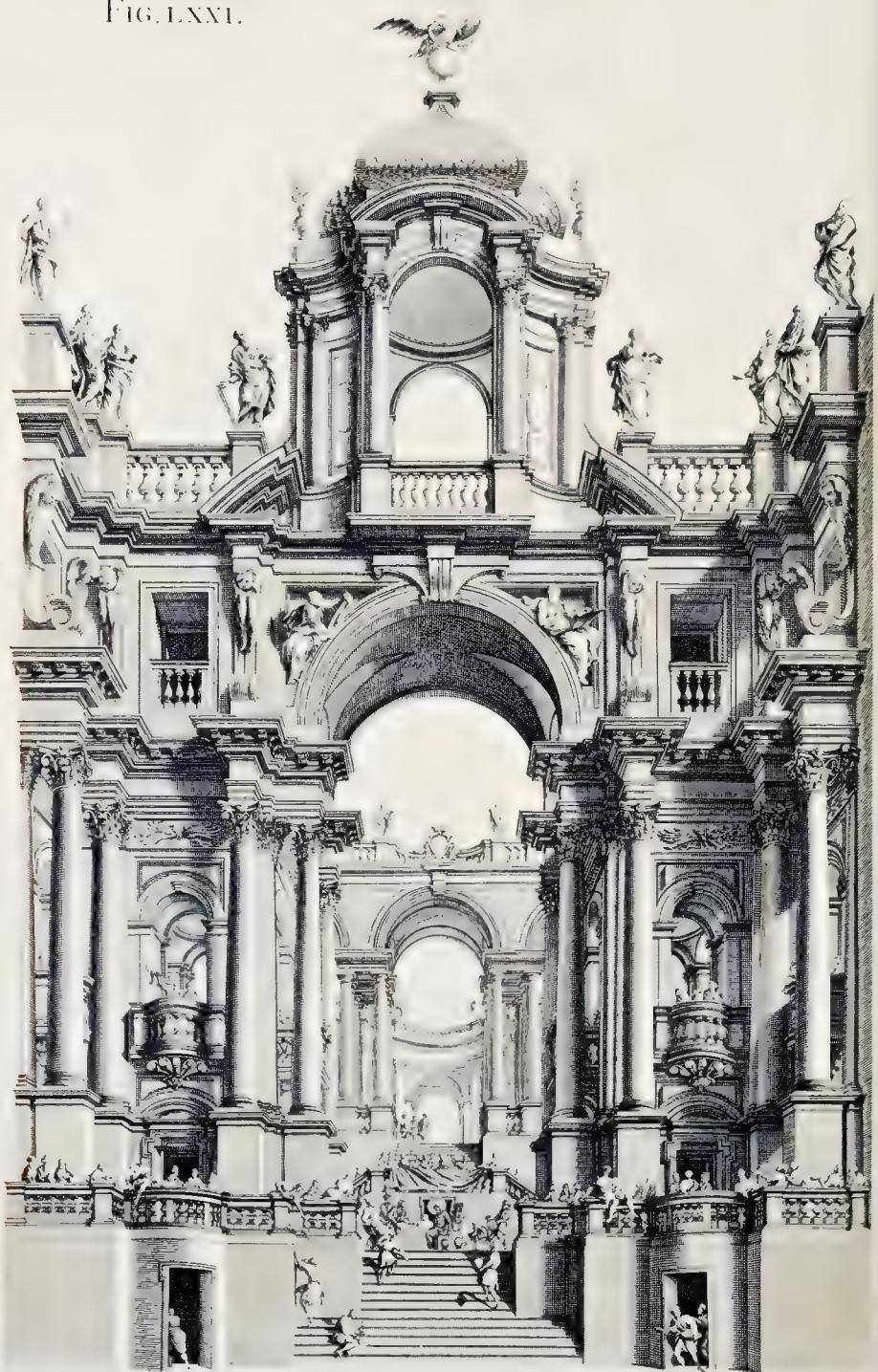


FIGURA Septuagesimaprima.

Theatrum repræsentans Nuptias Canæ Galilææ,
constructum Romæ, anno 1685. in expositione
Ven. Sacramenti in Templo Farnesiano Socie-
tatis JESU.



X antecedentibus præparationibus eruimus projectionem nobilis hujus Architecturæ, quæ oculos implebat tum ad lucem solis diurnam, tum præcipue ad lumen candelarum; ex quibus multæ palam erant expositæ, aliae omnino latebant, ut illuminarent sex diversos ordines teliariorum quibus tota machine constabat, non computando in hoc numero telaria, quæ in medio arcu maximi exprimebant nubes refertas Angelis adorantibus Venerabile Sacramentum. Nubes istas omisimus, ne abscondentur partes interiorum adificiorum. In disponendis autem ordinibus teliariorum, servatus est modus quem declaravi figuræ sexagesimaprima & sexagesimasecunda; ac præterea in eligenda eorum distantia curatum fuit, ut candelæ in parte postica teliariorum collocatae, illuminarent faciem teliariorum interiorum. Porro quot membra præcipua in duabus faciebus majoribus, totidem distincta telaria numerabantur, quorum proinde connexiones discerni vix poterant; eorumque aliquot paria ferreis hamulis copulata erant, ut explicari ac replicari possent, ad faciliorem tractationem diuturnioreisque conseruationem.

Qui bucusque sequuti me fuerint, nihil dubito quin suum iter felicissimè sint prosecuturi; atque Opera his nostris majora melioraque inventuri.

The Seventy-first FIGURE.

A Theater representing the Marriage of Cana in Galilee, erected in the Jesuits Church at Rome, in the Year 1685; for the Solemnity of exposing the Holy Sacrament.

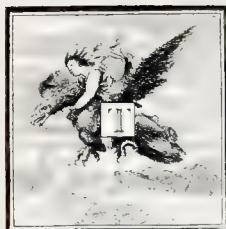


ROM the foregoing Preparations, is drawn the Perspective of this noble Piece of Architecture; which struck the Eye when seen by Day-light, but was more especially surprizing by Candle-light; many of the Candles being expos'd to Sight, and others altogether hidden, to illuminate the six different Ranges of Scenes, of which the whole Work consisted, without reckoning that in the midst of the great Arch, representing Clouds fill'd with Angels adoring the blessed Sacrament. Those Clouds are here omitted, that the inner Parts of the Work might be the better seen. In disposing the several Ranges of Scenes, the same Method was observ'd, which was deliver'd in the Sixty-first and Sixty-second Figures; and great Care was also taken in their Distances, that the Candles plac'd on the Back of one of them might illuminate the Face of the other behind it. Moreover, each Scene consisted of as many parts, as there were principal Members in the two greater Facades; so that the Joints were scarcely discernible: and some Pairs of them being coupl'd with Hinges, folded and unfolded, for the more easy managing and preserving them.

I doubt not but those who have follow'd me thus far, will be encourag'd so to prosecute their Studies, as to be able to design even greater and more noble Works, than these of mine.

FIGURA Septuagesima secunda.

De theatris scenicis.



HIEATRIS que jam delineavimus officia sunt theatra scenica: in his tamen non addit facile reperitur panellum oculi seu perspective. Praterea, quia ex obliquitate canalium intra quos moventur scene, oritur ut linea recta que videri debent parallela ad lineam plani, non debeant esse parallela sed oblique, harum delineatio difficultate non caret. I-commodum i-stud vitari poset adhibendo canales parallelos ad pofcenum, ut alicubi fieri solet, praetextum in Germania. Nihilominus usus Italicus affer hoc adjumentum, ut illi quibus incumbit suggerere actioribus, vel scenas mouere, aliiisque similibus praefesse, facilius lateat & liberius fungantur munere suo.

Ut brevem summam habeas eorum que deinde latius declaraturi sumus, hanc figuram contemplore. 1, 2, 3, 4, est vestigium aule que habet in longitudine centumviginti palmos Romanos, in latitudine sexaginta palmos; ut ostendit scda S triginta palmarum. Medietatem toti concut theatrum, medietatem obtinet podia & loca spectatorum. O panellum in quo uniuersit linea vifual s, D locus pro apparentiis rerum magis ac magis distantium. BC locus pofcenii. HH sunt canales obliqui, quorum latitudo est dupla latitudinis scenarum. FG frons & facies theatri. AO eius profunditas aut longitudo. E locus pro psalibus, tibiernibus, & fidelitoribus. K spatium pro fidelitoribus. I vestigium podiorum. L scala podiorum. N ipforum elevatio. M declivitas tribulati, cum sectione & elevatione theatri, & scenis ex latero inspectis, que cum suis canalibus congruant, ut demonstrant linea occulta. OO linea normalis ad lineam horizontalem. P & Q elevatio scenarum coram inspectarum, que introrsum flectuntur; & in latitudine congruente cum canalibus vestigii B, in altitudine cum sectionibus elevationis M; ut constat ex lineis occultis. In eadem elevatione M pars altitudinis tribuenda est scenis, pars laquearibus R, per que jungitur unumquodque par teliariorum. VV linea ad explorandam an detur vacuna inter scenas & laquearia, vel inter scenas, vel inter laquearia. In quibusdam autem scenis, loco laquearium pinguntur nubes &c.

The Seventy-second FIGURE.

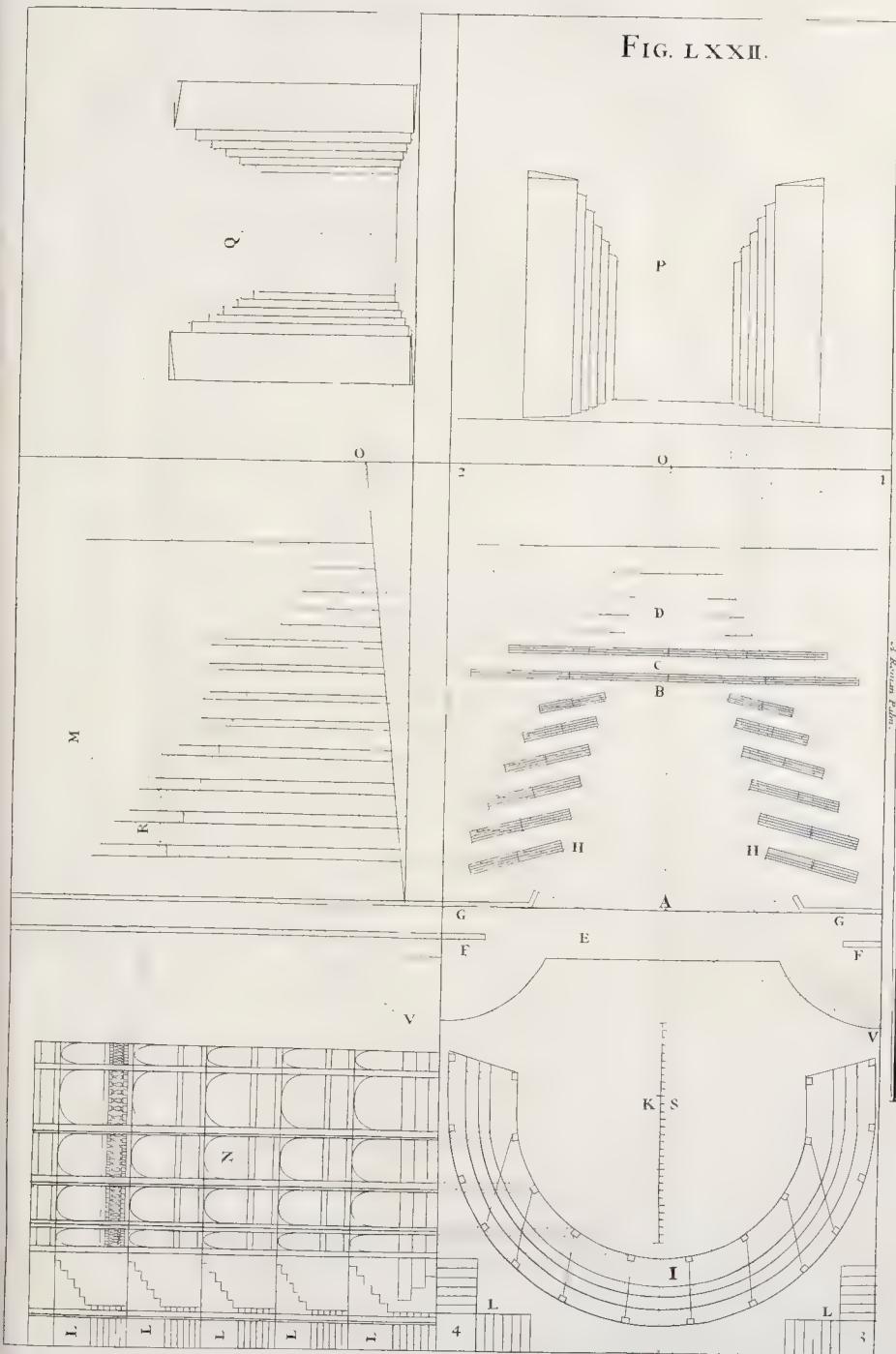
Of Scenes for the Stage.



CENES for the Stage have very much Affinity with those lately describ'd, but the Point of Sight is not so easily found in these; and from the Obliquity of the Grooves in which the Scenes run, it comes to pass, that the right Lines which ought to appear parallel to the Line of the Plan, must not be drawn parallel thereto, but oblique; which is a Work of some Difficulty. This indeed may be avoided, by fixing the Grooves parallel to the Pofcene; as is usual in some Places, especially in Germany. Nevertheless, the Italian Manner has this Advantage; That those who are employ'd to prompt the Aetors, and shift the Scenes, &c. are less expos'd to Sight, in the Performance of their Busines.

In this Figure I have given you an Abridgment of those things, which shall hereafter be more enlarr'd on. The Numbers 1, 2, 3, 4, denote the Area of a Hall an hundred an twenty Roman Palms in Length, and fifty in Breadth; as is manifest from the Scale of thirty Palms mark'd S. Half this Space is taken up by the Stage, the other half by the Spectators. O is the Point in which the vifual Lines concenter. D is the Place of those things that are to appear most remote. BC is the Place of the Pofcene. HH are the oblique Grooves, whose Lengths are double the Breadth of the Scenes. FG is the Front of the Stage. AO is its Depth or Length. E is the Place for the Musick. K is the Room for Spectators. I is the Plan of the Galleries. L the Stairs to the same. N is the Elevation of the Galleries. M shews the Declivity of the Floor, with the Section and Elevation of the Stage and Scenes view'd on the Side; anfwering their respective Grooves, as the occult Lines demonstrate. OO is a Line perpendicular to that of the Horizon. P and Q are the Elevation of the Scenes view'd in Front, turning inwards, in Breadth agreeing with the Length of the Grooves of the Plan B; and in Height anfwering that of the Sections of the Elevation M; as is evident from the occult Lines. In this Profile M, part of the Height belongs to the Scenes, and part to their Soflices, or Ceilings, R; where each Pair of these Frames are join'd. VV are the Lines by which is cyp'd what Vacancy there is either between the Scenes and their Ceilings, between the Scenes themselves, or between their respective Ceilings; though in some Scenes the Place of these last is supply'd by painting therein the Air with Clouds, &c.

FIG. LXXII.







O

FIG. LXXIII.

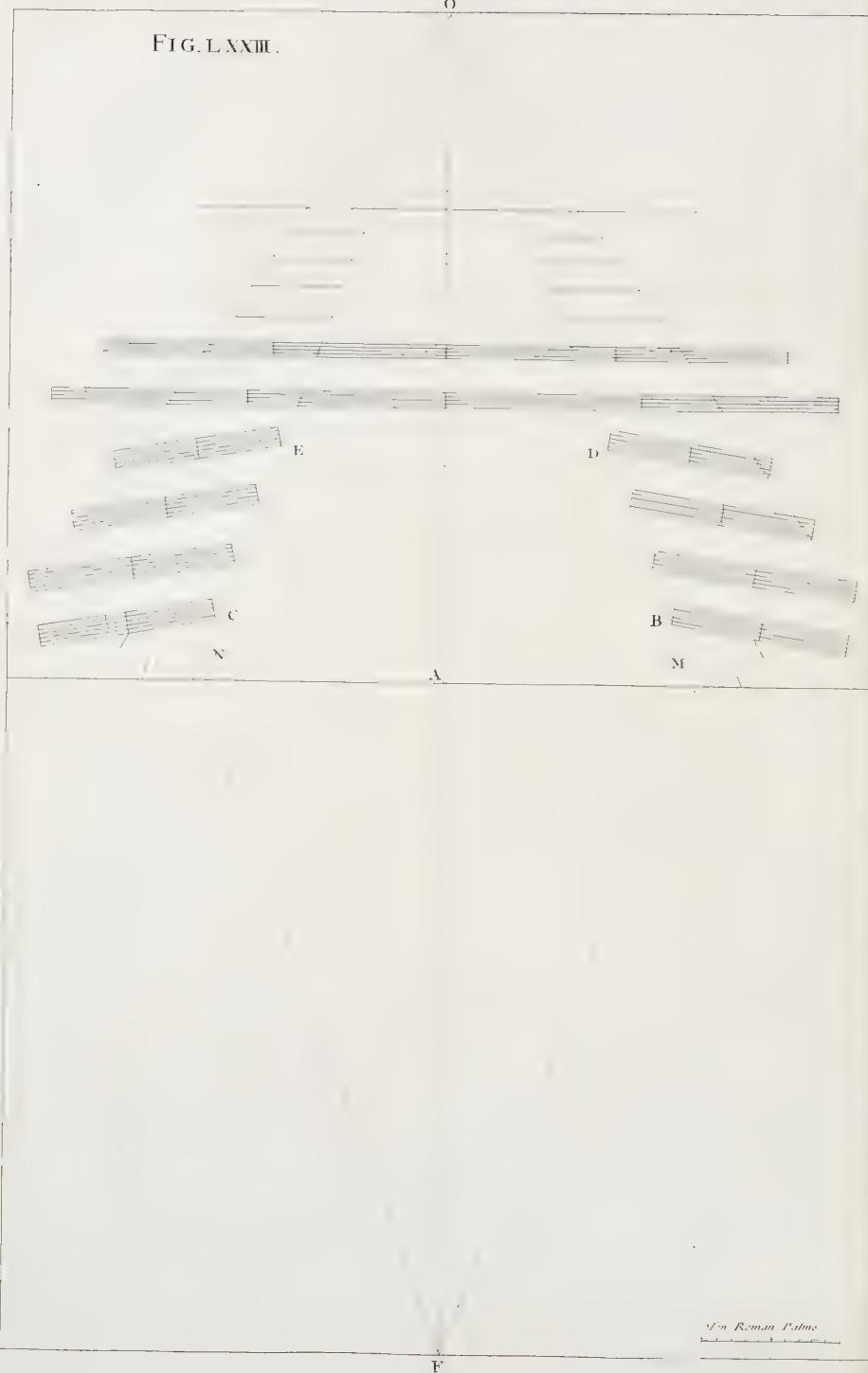
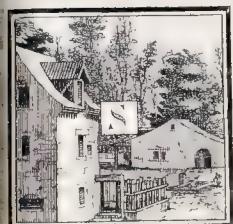


FIGURA Septuagesimatercia.

Aliud vestigium theatri, ubi de modo inveniendi
ejus punctum.



I pingendæ sint scena theatri alicujus antea constructi, delineare oportet vestigium geometricum ex ipso erutum, (ad formam vestigii quod cernis in hac paginâ) ut inveniatur longitudine theatri, seu distantia quam ejus punctum habet à puncto A: id autem nullo negotio fiet, accipiendo distantias BC inter primos canales, & DE inter ultimos, ac ducendo visuales MO, NO: nam theatrum habebit longitudinem AO, ac punctum perspectivæ in vestigio theatri erit O. Præterea scire oportet longitudinem & latitudinem canalium, eorumque numerum, distantias, & flexus; ac præcipue curandum est, ut licet sint obliqui ad lineam MN, sint invicem paralleli in unoquoque latere, ac singuli tangent lineas MO, NO. Jam si rectæ AO fiat æqualis rectæ FA, in F erit punctum distantiae: adeoque si theatrum juxta methodum à nobis tradendam depictum fuerit, spectatori qui consistat in F apparebit veluti tabula picta juxta leges perspectivæ, posita in A.

The Seventy-third FIGURE.

*Another Plan of a Theater, with the Method of finding
the Point of Sight therein.*



If it be requir'd to paint the Scenes of some Theater already built, the Geometrical Plan thereof must first be carefully drawn, (as you see, for Example, in this Plate) that the Length of the Theater may be found; or the Distance of its Point from that of A; which is easily done, by taking the Interval BC of the first Grooves, and DE of the latter; and drawing the Visuals MO, NO: for AO is the Length of the Theater, and the Point of Sight, or Perspective, therein, is O. Moreover the Length and Breadth of the Grooves must be known, as also their Numbers, Distance, and Obliquity; and especial Care must be taken, that though they be oblique to the Line MN, that on each Side they be Parallels between themselves, and that they all touch the Lines MO, NO. If you then make AO equal to FA, the Point of Distance will be F; and if the Theater be painted according to the Rules hereafter given, it will appear to him that views it from F, as a regular Piece of Perspective plac'd in A.

Figura Septuagesim. quarta.

Sectio Scenarum Theatri.

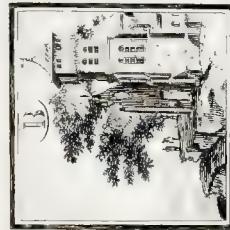


*RÆTERR. velut quantum Theatri determinat est fictio
scenarum. Iugae si acceptis mordibus dilatatur,
quam portio A unde incipit tabulation, ac partio
etiam D perficit, hanc in præsum horizontale
FV, sicut ex perpendiculari NV cum recta ADO
ex qua innominata tabulatio, tam recta NO,
que si parallela ad FV & aqualis recte AO fi-
guia figuram inatrix, punctum theatri in eleva-
tione est P. O; in polvino vero punctum theatri est Q.
Si maxima /castra non altitudo sit IB, recta OE dat altitudinem omnium reliqua-
non. Vera tamen altitudo emplift scene est illa quam habet linea major, ex mi-
nor autem diagonaliter quantum obliquis uniuscunq; scene apparatur minor altitu-
dinem extreme illius lineæ. Porro ex his quo linea major impetrat minorem non
in summo tan in imo, diligenter notandus est, hinc cum punctum intelligentia figura
heptagonum inveniatur. Punctum M quod est remotum ab N quantum in figura
præceptum in punctum F est remotum ab A, designat locum unde Theatrum per-
clavi oporteat, ut ibidem inservias.*

*In confrondando tabulatio sicut servari haec regula, ut altitudo puncti O sit æqualis
altitudini oculi, & elevatio ex A infra ad D sit non excedit. Vel decima pars te-
plicis longitudinis AD. Exspectaret autem ut hinc facilius modendas, pavimentorum
offic profundius pavimento G, ut eretto corpore habet tabulatio ambulant posse.*

Seventy-fourth Figure.

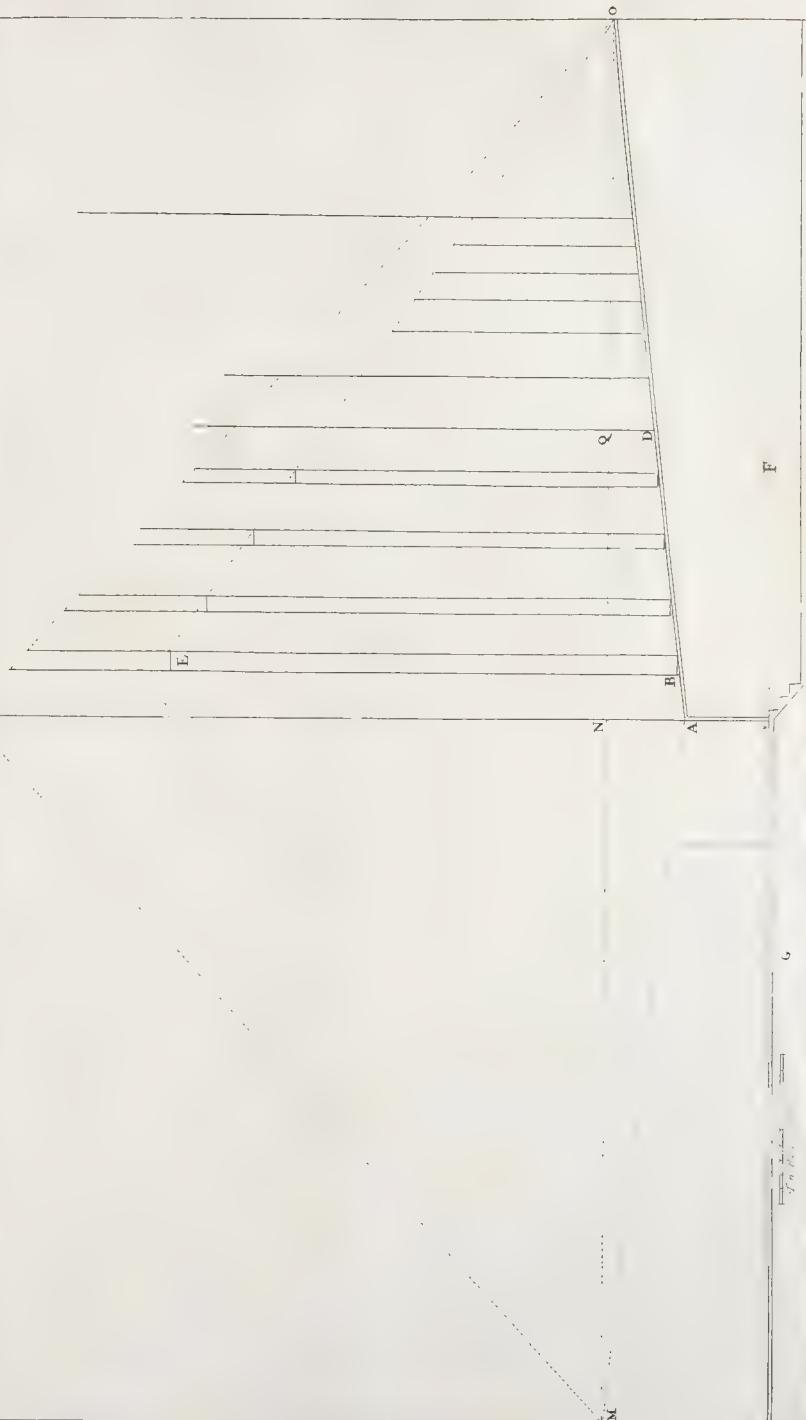
The Section or Profile of Scenes for Theaters.



ESTUDIUS the plan of the Theater, the Section of the Scenes is also to be delineated, for finding the Point of the Theater in the Elevation which the Point A, where the Floor of the Stage begins, and the Point D of the Piscene, have above the Level of the Horizontal FV; from the Perpendicular NV draw the right Line ADO, which gives the Declivity of the Stage; then make NO parallel to FV, and equal to AO of the Seventy-third Figure: The Point of the Theater in Elevation is O; the Point of the same on the Piscene is Q. If IB be the greatest Height of the first Scene, the Line OF determines the Height of all the others. The longer of the two Lines gives the true Height of each Scene; and the shorter discovers how much of that Height the Sight loses on the Out-line, by the oblique Position of the Scenes. Moreover, the Excess of the longer Line above the shorter, as well at top as at bottom, is to be well observed; for on this depends the right Understanding of the Seventy-fifth Figure. The Point M, which is as far distant from N, as that of F is from A in the Seventy-third Figure, denotes the Place from whence the Stage ought to be viewed; as there mentioned.

In laying the Floor of the Stage, this Rule is commonly observ'd. That the Height of the Point O be made equal to the Height of the Eye, and that the Rule of the Floor from A to D, be about a Ninth or Tenth Part of the Length AD. 'Tis also requisite, for the better shewing the Scenes, that the Pavement F be sunk lower than that of G, that a Man may walk upright under the Floor thereof.

FIG. LXXIV.





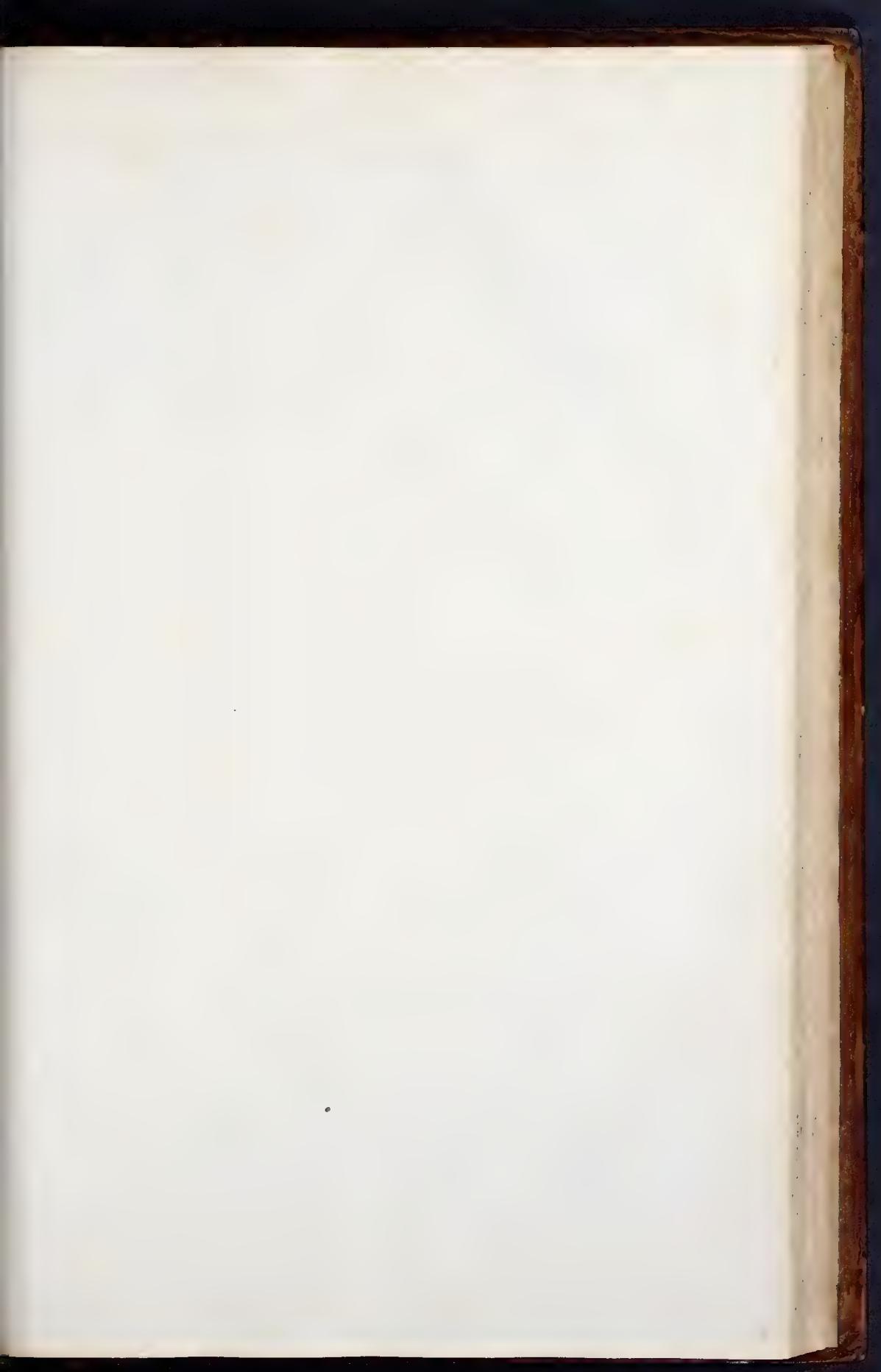


FIG. LXXV.

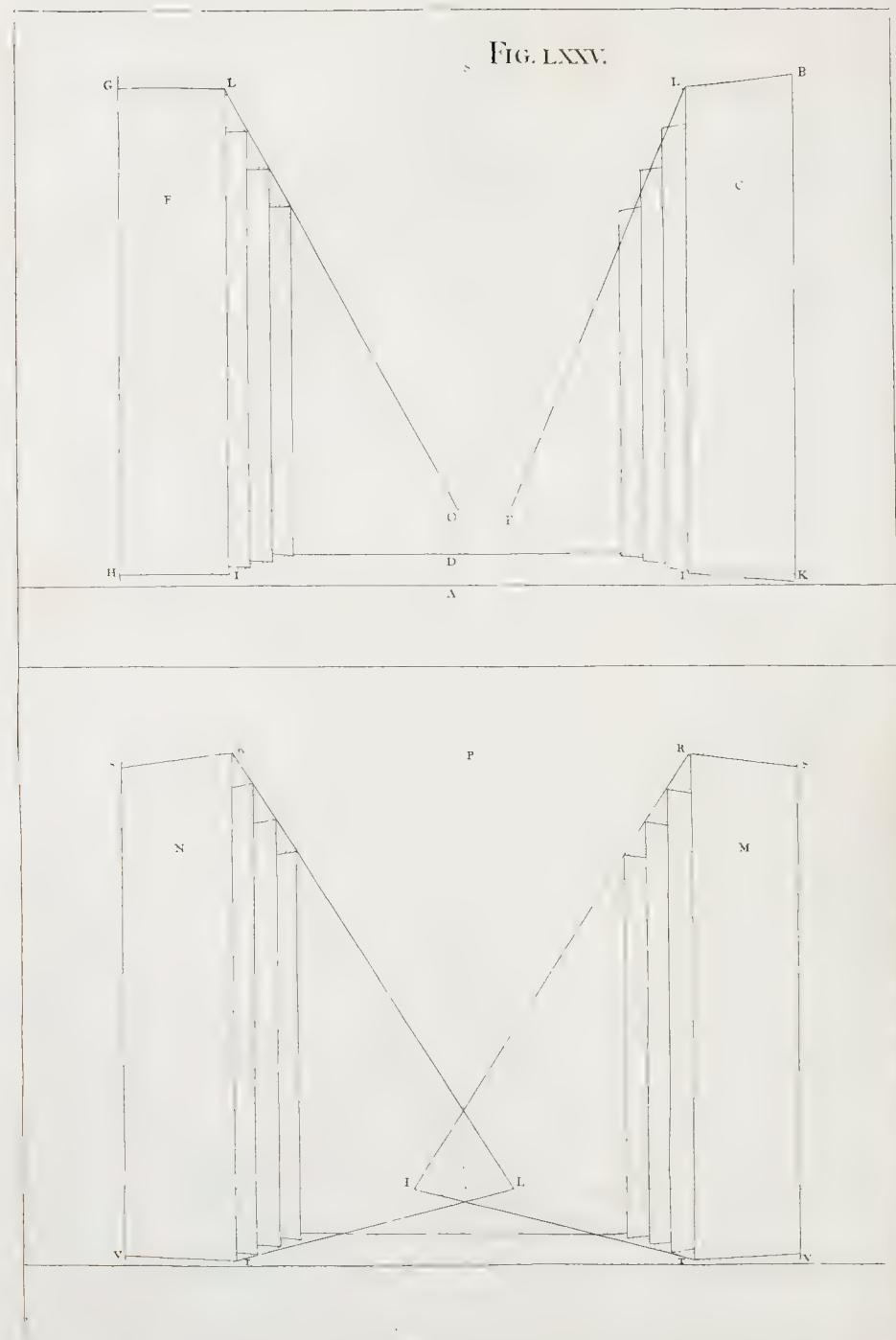


FIGURA Septuagesima quinta.

Elevatio scenarum coram inspectarum : ubi docetur artificium ut scenæ obliquæ
apparant rectæ.



CENÆ quas vides in S, habent suam latitudinem à vestigio figuræ septuagesimæ quartæ, ac censentur elevæ & canalibus insertæ, que omnia representantur etiam figuræ septuagesimæ secunda in P & Q. Velix observes quantum elevetur tabulatum in principio A, in posceno D, & in puncto theatri O. Similiter notare oportet elevationem singularum scenarum, quæ propter obliquitatem canalium flectuntur introrsum : ictice lineæ BL, KI, partis C, non videntur parallelae ad lineam plani, ut re ipsa sunt ; ac visualis LF non tendit ad punctum oculi O, sed ad punctum F. Si autem excessus apparet, quem recta BK habet in summo & imo supra rectam LI transferatur in partem E scenarum, (idem excessus defini etiam possunt ex figura septuagesimæ quartæ) ac ducantur rectæ LG, IH, habebuntur lineæ apparet parallelae ad lineam plani. Si fiat recta LO, que cum LG faciat angulum GLO æqualem angulo BLF, eadem LO tendet exactissime ad punctum O oculi, eaque utendum erit ut visuali.

In P supponimus scenas M & N jacere super pavimento unas super aliis, ac duas lineas RT habere distantiam eandem cum duabus LI, & ita in reliquis scenis. Ubi notandum est, lineas RS, TV, easdem esse cum lineis LG, IH, scenarum E : nihilominus lineas RS, TV, non esse parallelas, quam tamen LG, IH, videantur parallelae. Proinde, si fiat recta RL, & anguli SRL, GLO, sint æquales, rectâ RL utendum erit tanquam visuali, in L erit punctum accidentale oculi pro pingendis scenis N, ac lineæ RS, TV, habebuntur ut parallelae : id autem quod supereft in telario ultra tales lineas, pro nihilo computabitur, ibique pingetur aer aut aliquid aliud. Punctum accidentale oculi pro pingendis scenis M erit in I.

The Seventy-fifth FIGURE.

The Elevation of Scenes in Front, and how the oblique Scenes are made to appear direct.



HE Scenes in S have their Breadth from the Plan of the Seventy-third Figure, and their Height from the Elevation of the Seventy-fourth Figure ; and are suppos'd to stand perpendicularly in their Grooves ; all which is also represented in P and Q of the Seventy-second Figure. I would have you observe, how much the Floor rises, from its Edge A, to the Poscene D, and to the Point of the Theater O. You should also note the Elevation of each Scene, which, by reason of the Obliquity of the Grooves, turn inward : Wherefore the Lines BL, KI, of the Part C, do not seem Parallels to the Ground-line, as they really are ; and the Visual LF tends not to the Point of Sight O, but to the Point F. But if the seeming Excess, which the Line BK has at top and at bottom, above the Line LI, be transferr'd on the Side of the Scenes E, (which Excess may also be taken from the Seventy-fourth Figure) and you draw the Lines LG, IH ; these Lines will appear Parallels to the Line of the Plan. Then drawing the Line LO, so as to make the Angle GLO equal to the Angle BLF, the said LO shall tend directly to the Point of Sight O ; and serve for a visual Line.

In P, I suppose the Scenes M and N to lie one upon another on the Floor, and the two Lines RT to have the same Distance as the Lines LI ; and so of the others. Where you are to take Notice, that the Lines RS, TV, are the same with the Lines LG, IH, of the Scenes E : and that the Lines RS, TV, are not Parallels ; altho' LG, IH, seem to be so. Therefore, if you draw the Line RL, so that the Angles SRL, and GLO, be equal ; the Line RL shall serve as a Visual, and L shall be the accidental Point of Sight, for painting the Scenes of the Side N ; and the Lines RS, TV, shall be us'd as Parallels. What remains on the Frame, beyond those Lines, is to be reckon'd as nothing ; but you may paint there Air, or what you please. The accidental Point of Sight for painting the Scenes of the Side M, is I.

FIGURA Septuagesimafesta.

Modus delineandi exemplar scenarum.



TERUM delineavimus scenas eretas super tabulato; in B nudas, in A depictas, additis projecturis cornicum & aliorum ornamento-rum. Deformatio scenarum A eruitur metho-do consuetâ ex vestigio C, in quo videbis li-neam plani deorsum protractam. Vestigium autem geometricum est in D.

The Seventy-sixth FIGURE.

The Manner of delineating the Designs of Scenes.



In this Plate you have another Design of Scenes erected on the Floor; the naked Scenes are B; the painted ones A; with the additional Projectures of Cornices and other Ornaments. The Draught of the Scenes A is produc'd from the Plan C, after the usual Manner; in which you may observe the Ground-line to be lower than its true place, for the greater Distinction of the Parallels. The Geometrical Plan is D.

FIG. LXXVI

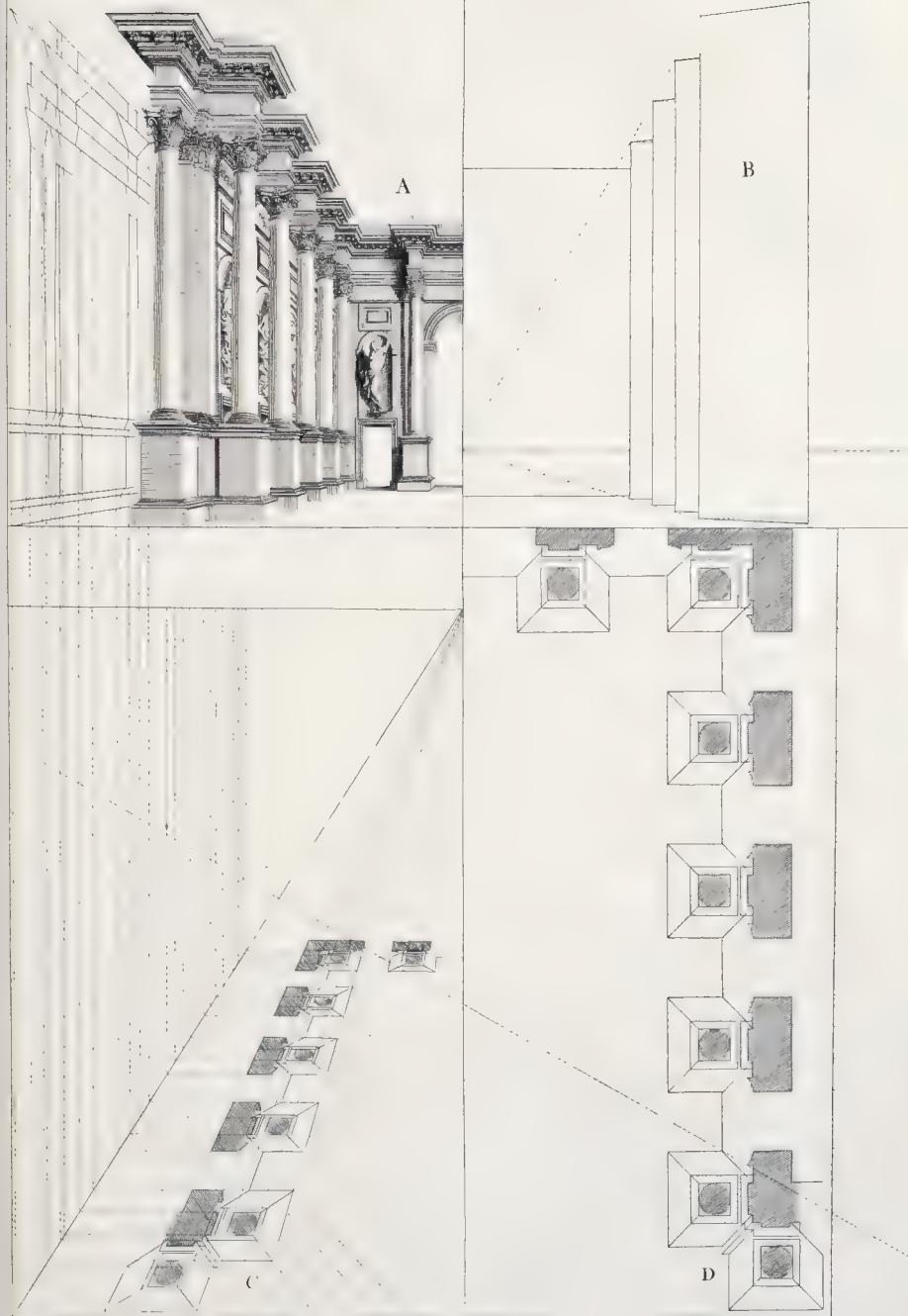




FIG. LXXVII.

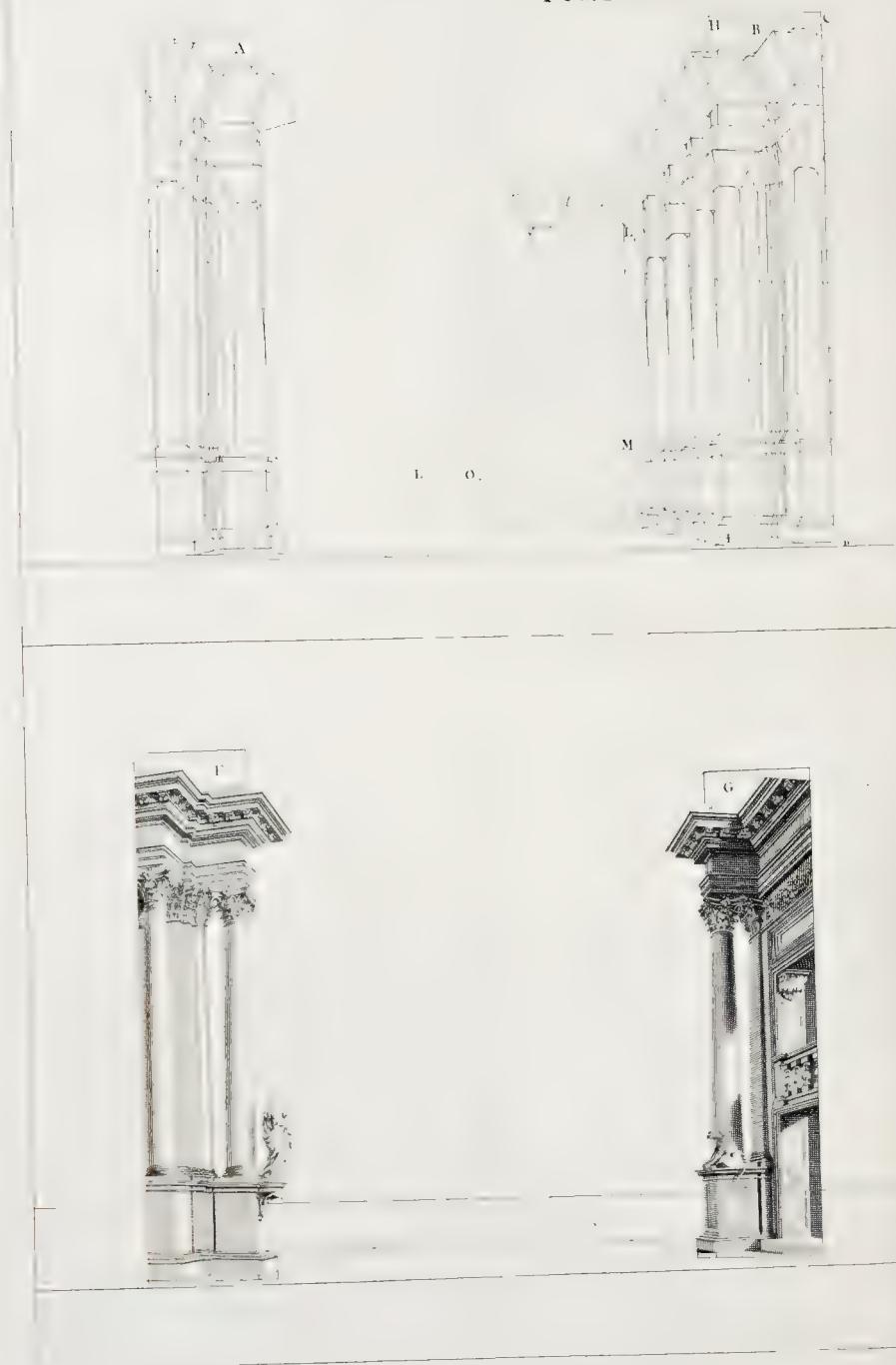


FIGURA Septuagesima septima.

Modus reticulandi & pingendi scena theatri.



OSTQUAM in pavimento exactissime disposueris tum poscenium, tum ex ordine scena reliquias, unam alteri incumbentem, ut figurâ septuagesima quinta declaravimus, sit linea horizontalis, in qua notanda sunt tria puncta perspective, unum in O usui futurum in pingendo poscenio, ac duo reliqua hinc inde, singula videlicet pro scena partis oppositæ. Jam supponendo quod in parvo exemplari A prima scena facta fuerit reticulatio per quadrata perfecta; proportionalis divisio sit tum in recta HI prima scena B, tum in recta CD. Postea ex puncto E, per singula puncta divisionum recte HI, sicut visuales, adhibendo funiculum colore nigro imbutum; earumque ope, ut figura ostendit, reticulare oportebit scenam B, tum remotâ ea scenam illi subjectam, & eodem modo aliam & aliam; ac deinceps per divisiones quas in recta LM faciunt visuales ex puncto E, absolvetur reticulatio poscenii, cuius quadrata esse debent perfecta, secus quadrata scenarum. In parte inferiori paginae, duæ scena G & F ostendunt ornamenta que in scenis depingi possunt. Velim autem observes, tum lineas transversas cornicum, qua non sunt invicem parallelæ, tum visuales, que tendunt ad puncta opposita. Nam ejusmodi lineæ continent duas peculiares difficultates projectionum theatralium; easque ut superes, exactè servanda sunt regulæ quas declaravimus.

The Seventy-seventh FIGURE.

The Manner of making the Net-work or Squares, and painting the Scenes of Theaters.



FTER you have with great Exactness dispos'd the Poscene on the Pavement, and the others in order one upon another, as was mention'd in the Seventy-fifth Figure; draw the horizontal Line, and mark therein three Points of Sight: That in O, for the Use of the Poscene; and the Points on the Sides, for the Service of the opposite Scenes respectively. Then, supposing that the Net-work of the small Draught of the first Scene A, consists of perfect Squares; transport the same Divisions both on the Lines HI and CD of the first Scene B; and with a black Line strike the Visuals from the Point E, by the Points of the Divisions of HI; and by the Help of those Visuals make the Net-work of the Scene B, as is done in the Figure. When that's done, lay it aside; and do the next in the same manner; and so of the others. Lastly, by the Divisions, which the Visuals from the Point E make on the Perpendicular LM, finish the Net-work on the Poscene, which consists of perfect Squares, though that of the Scenes does not. The two Scenes of the lower part of the Plate, G and F, shew what Diversity of Ornament the Painter may introduce. I would have you also take particular Notice, both of the transverse Lines of the Cornice, which are not Parallels to each other; and of the Visuals which are directed to their opposite Points: because in these two Particulars lies the greatest Difficulty of describing Theatrical Designs; for the furnmounting which, it's absolutely necessary, that you carefully regard the Rules hitherto deliver'd.

FIGURA Septuagesima octava.

De projectionibus horizontalibus.



UE M A D M O D U M facilior est deformatio columnarum jacentium, quam columnarum erectarum; (nam lineæ qua in ipsis sunt perpendiculares, in illis sunt visuales, ac nullus circulus amittit suam formam) ita projectiones horizontales, quas in laquearibus delineare necesse est, contra quam Pictores imaginantur, expeditiores & faciliores sunt verticalibus, quas hucusque tractavimus. Nam ut stylobate & columnæ apparent erectæ, pingendæ sunt veluti jacentes.

Deformationes horizontales afferimur à mutulis, quia columnæ ac stylobate identidem iis imponuntur, ut magis in prospectu sint. Ob diversitatem verò quam habet tatus mutuli à sua facie, utriusque delineationem geometricam seorsim in hac figura exhibemus.

The Seventy-eighth FIGURE.

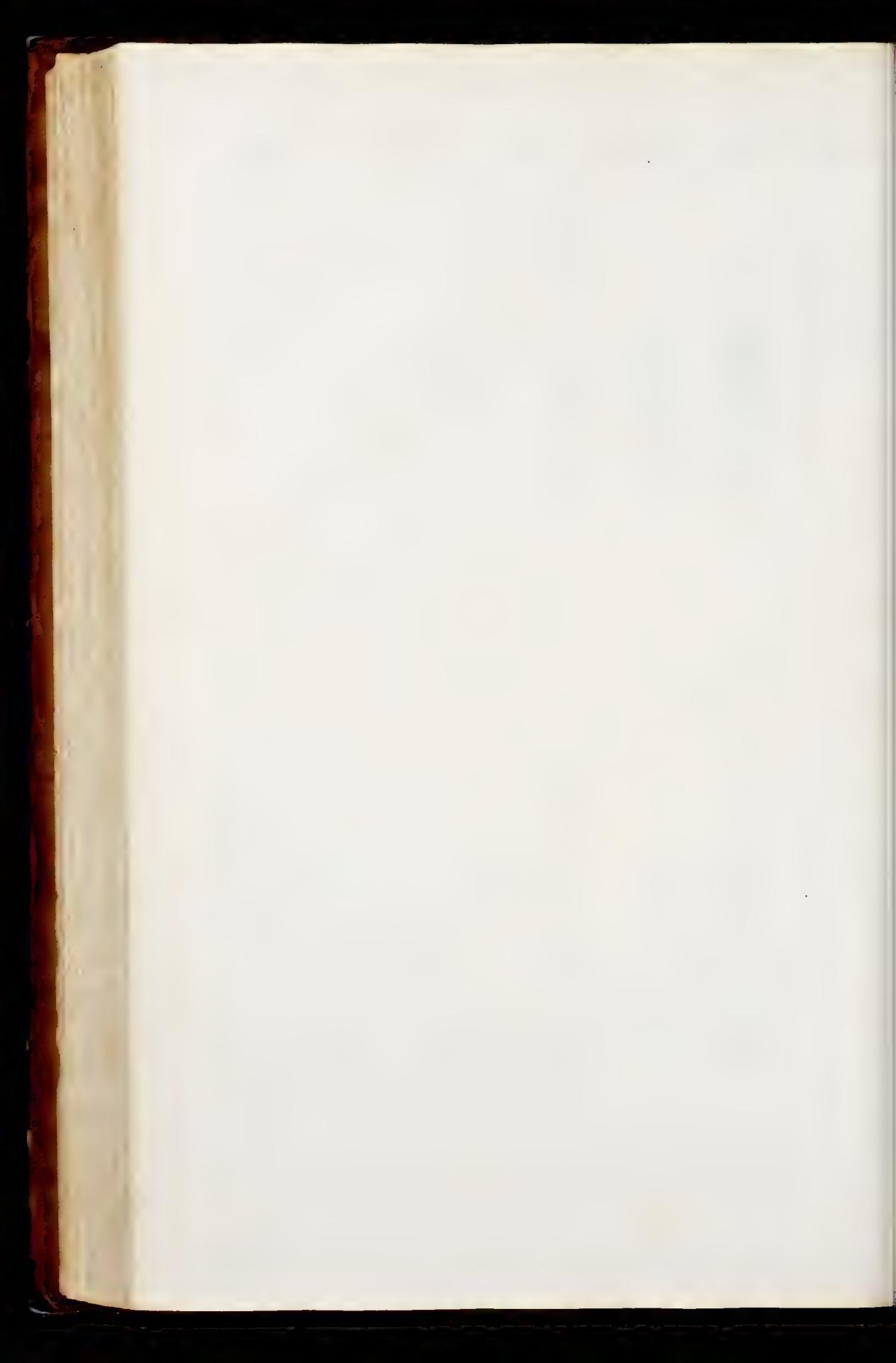
Of horizontal Perspective.



It is easier to describe in Perspective Columns lying on the ground, than those that are erect, (the Lines in these last being Perpendiculars, which in the former are Visuals, wherein no Circle loses its Form) so the horizontal Projections of Perspective, proper for Ceilings, contrary to the Judgment Painters usually make, are perform'd with more Ease and Expedition, than the vertical, which we have hitherto treated of; forasmuch as the Pedestals and Columns that must appear erect, are painted as if lying on the ground.

I have usher'd in these horizontal Designs with those of Corbels, because, for setting the Pedestals and Columns more in View, they generally seem to be supported by them. And the Side of this Corbel being different from its Face, I have here inserted a Geometrical Description of each distinct.





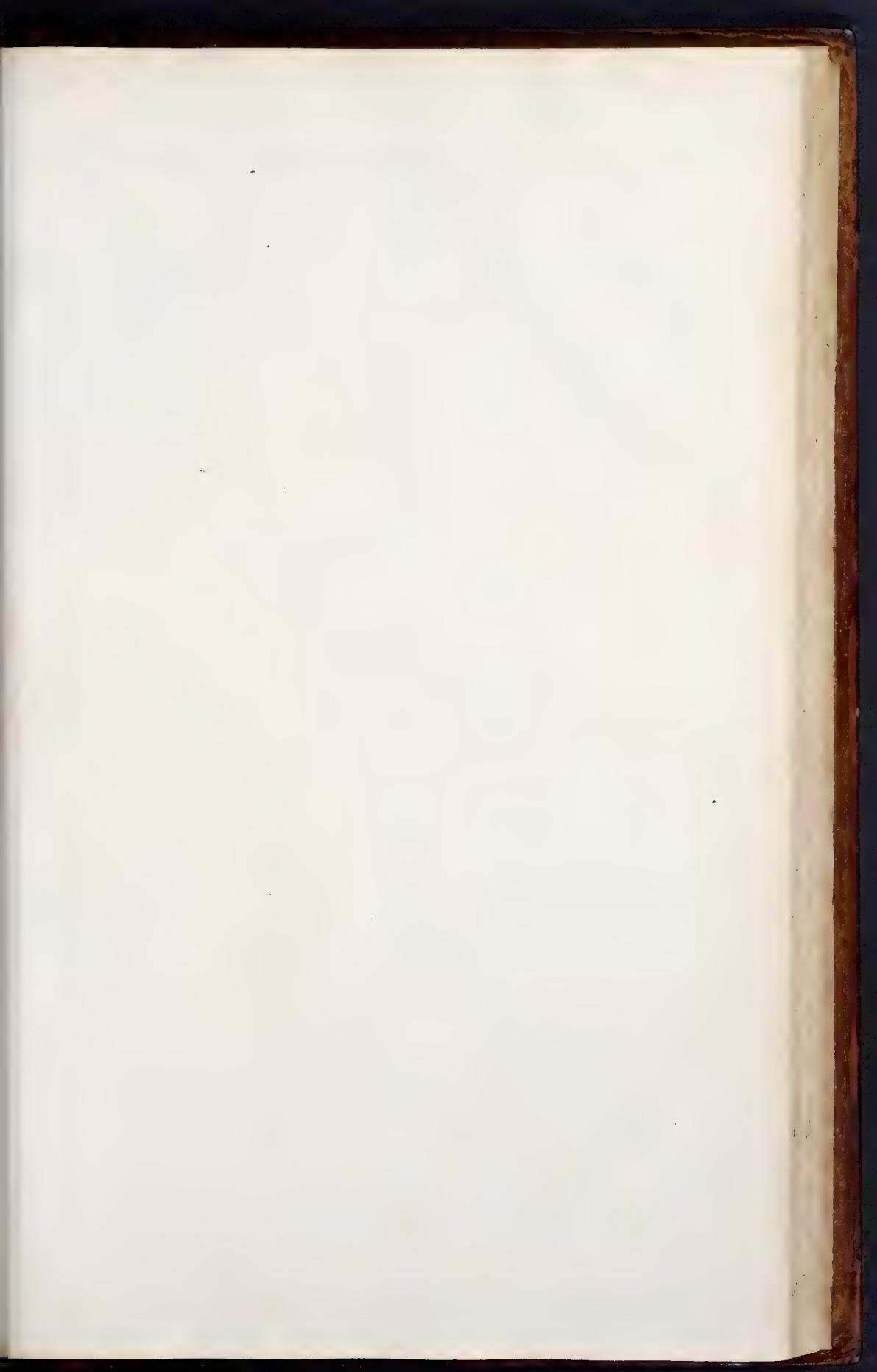


FIG. LXXX.

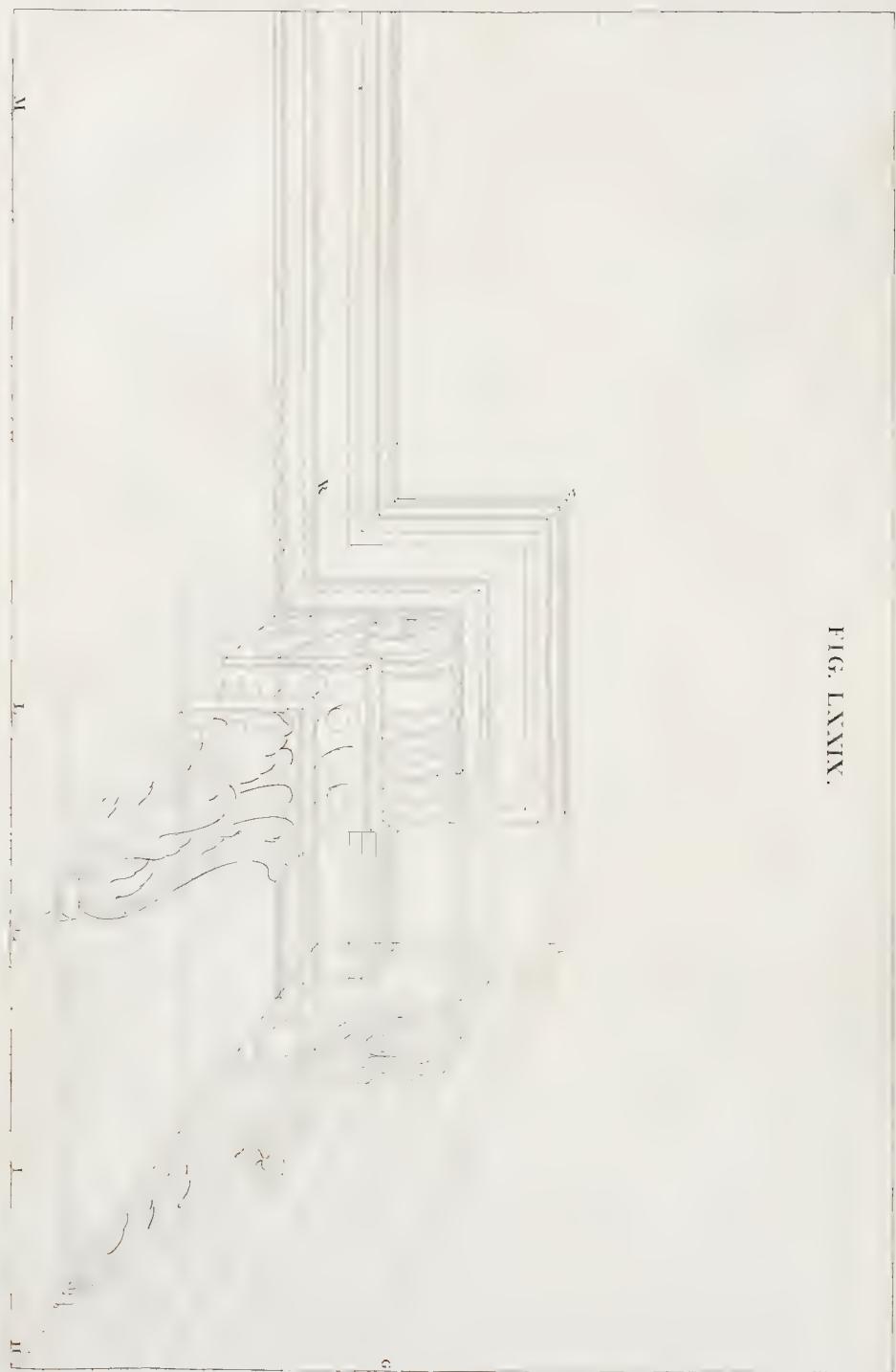


FIGURA Septuagesima nona.

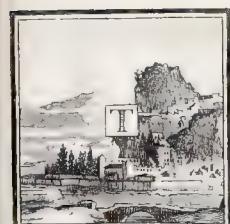
Projectiones vestigii & elevationis mutuli.



ACIES mutuli quam delineavimus figurâ septuagesimæ octavâ, gerit hic munus vestigii ; latus verò gerit munus elevationis ; ut ostendunt lineaæ occultæ, que ex divisionibus faciei tendunt ad punctum oculi, ex divisionibus lateris tendunt ad punctum distantie (puncta oculi ac distantie in hac & sequentibus figuris cadunt extra paginam.) Per sectiones harum linearum ducuntur lineaæ que terminant singulas partes vestigii deformati ; hujusque adjumento ducitur elevatio lateris, ac methodo consuetâ latitudines & longitudines mutuli solidi eruuntur ex vestigio, altitudines ex elevatione. Hic & deinceps nomina longitudinis & altitudinis usurpamus, veluti planum cuiuslibet perspectivæ esset verticale ; in qua suppositione, IL esset latitudo mutuli, SR altitudo, RL longitudo : quem SR reverâ sit longitudo, RL altitudo. Ad faciliorem descriptionem hujus figuræ observandum est, rectis IL, LM, GH, hujus paginae inesse divisiones rectangularia DC, FE, AB, figuræ septuagesimæ octavæ.

The Seventy-ninth FIGURE.

The Plan and Elevation of a Corbel in Perspective.



THE Face of the Corbel describ'd in the Seventy-eighth Figure, in this does the Office of a Plan ; and the Side serves here for the Elevation ; as is plain from the occult Lines, which from the Divisions of the Face tend to the Point of Sight, and from those of the Side tend to the Point of Distance ; both which Points, in this and the succeeding Figure, fall without the Plate. From the Intersections of these Lines are drawn others, that determine each Part of the Perspective-Plan ; by means of which, the Elevation of the Side being also form'd, the Breadths and Lengths of the solid Corbel are taken, as usual, from the Plan, and the Heights from the Elevation. Here and henceforward, the Terms of Length and Height are made use of, as though the Plan of each Perspective were vertical ; according to which Supposition, IL is the Breadth of the Corbel, SR the Height, and RL the Length ; whereas in reality SR is the Length, and RL the Height. For the more ready Description of this Figure you will do well to observe, that the Lines IL, LM, GH, of this Plate, bear the same Divisions as DC, FE, AB, of the Seventy-eighth Figure.

FIGURA OCTOGESIMA.

Horizontalis projectio mutuli inumbrati.



N hac figurâ suas umbras mutulo addidimus : eumque si in altum supra oculum elevaveris, & ex distantia quam ipsi dedimus susplexeris ; miraberis profecto, in alium longè concinniorum subito mutatum fuisse.

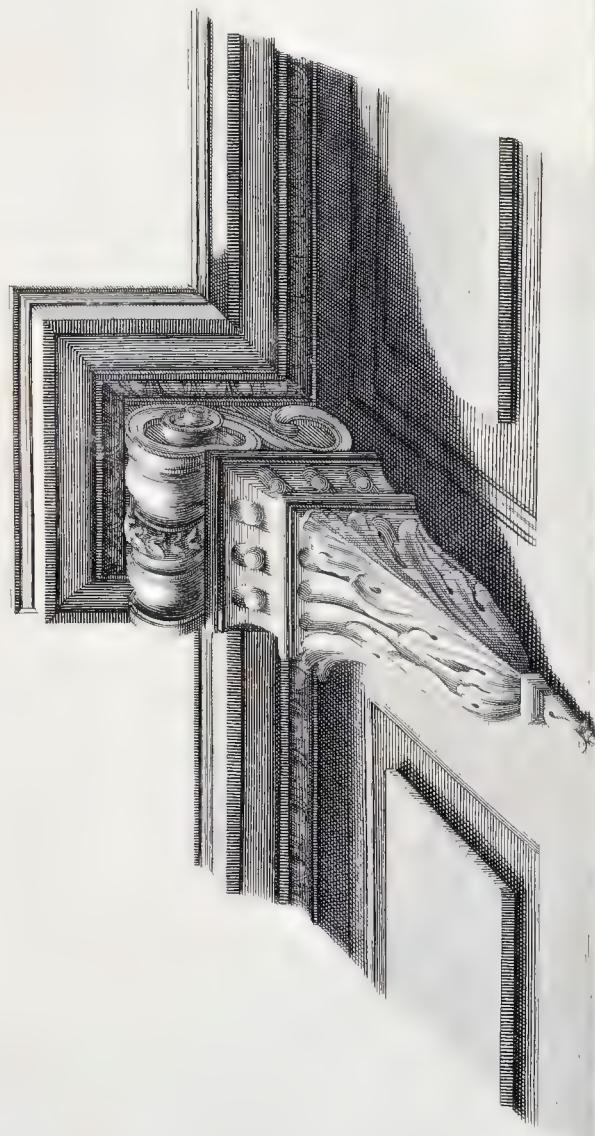
The EIGHTIETH FIGURE.

The Horizontal Projection of a shaded Corbel.



N this Figure you have the Corbel finish'd with its proper Shades ; which, if plac'd above the Eye, and beheld from the Distance here assign'd it ; you'll be stranglely surpriz'd at the sudden and most agreeable Alteration you'll find therein.

FIG. LXXX.



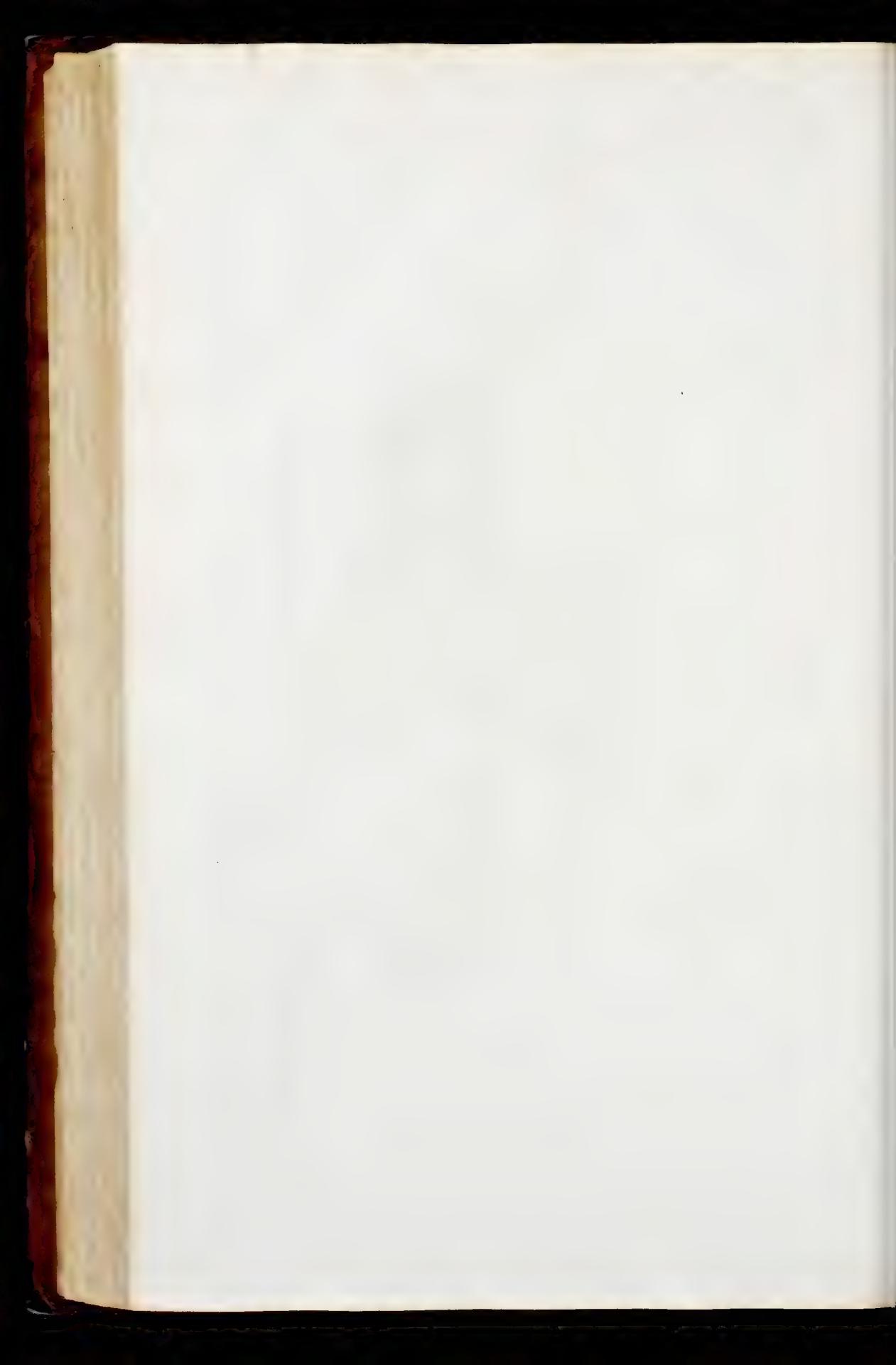




FIG. LXXXI.

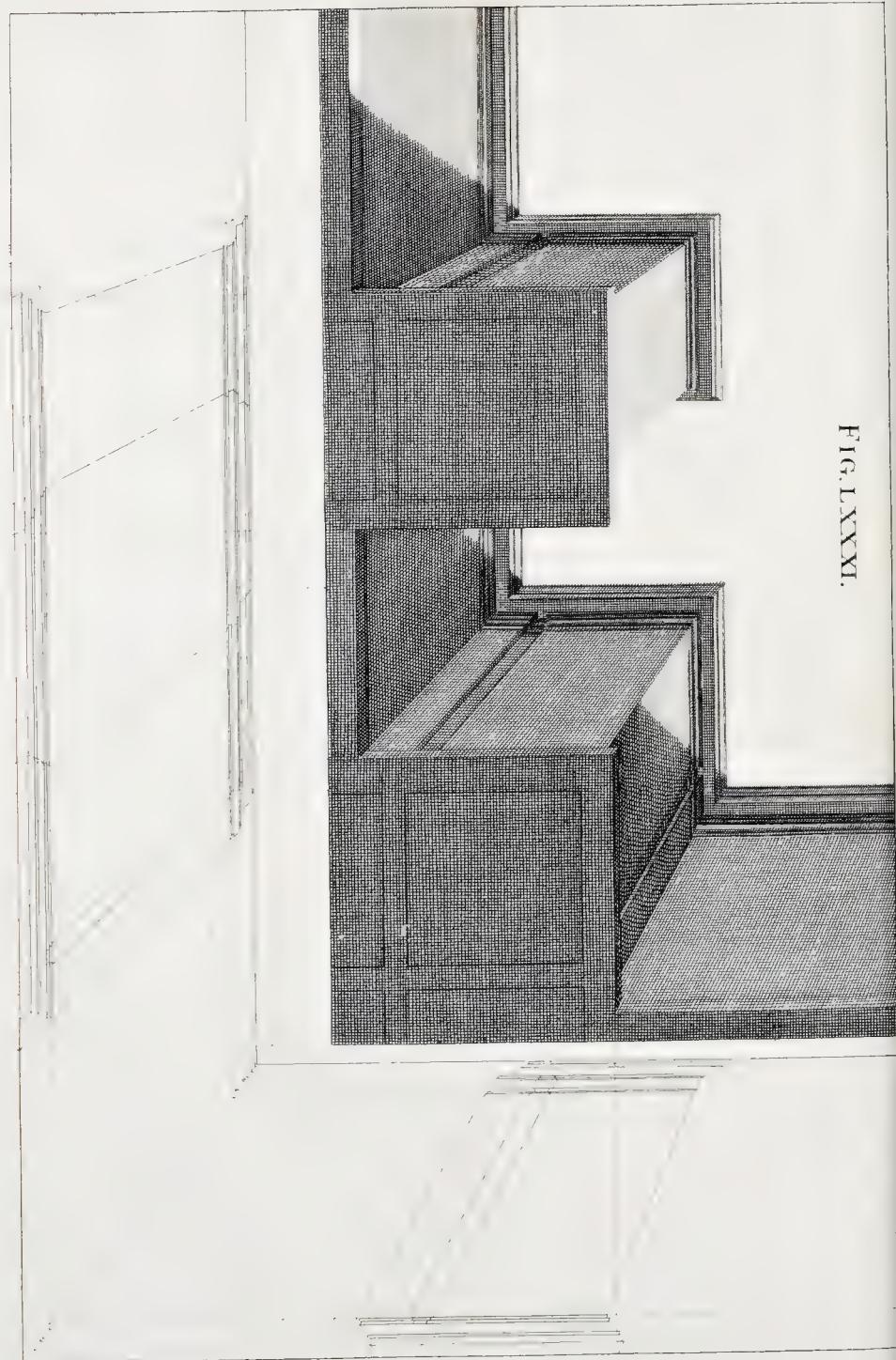
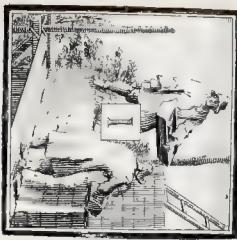


Figura Octogesima Prima.

Stylobatae Corinthii horizontaliter

contracti:

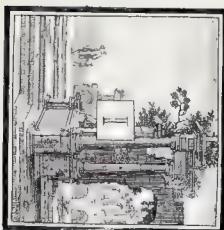


N deformatiis hysce Stylobatis, us sumus projectione vestigii & elevations, quam exhibet figura duodecima; ut figuram illam cum ista conferenti manefissimè constabit. Porro stylobatas pingi solere incumbentes mutulis, diminutis figurā septuageſma octavā.

The Eighty-first Figure.

Corinthian Pedestals in an Horizontal Perspective.

Perspective.



N delineating these Pedestals, I have made use of the Plan and Upright put into Perspective in the Twelfth Figure; as will evidently appear, by comparing that Figure with this. I have already mentioned, in the Seventy-eighth Figure, that in painting these Pedestals, they are generally suppos'd to be upheld by Corbels.

Figura Octoges. secunda.

Columna Corinthia horizontaliter deformata.

Eighty-second FIGURE.

A Corinthian Column in Horizontal Perspective.

ESTIGIUM & elevatio sylobatæ, quem delineavimus figurâ duodecimâ, suppediat mensuras pilaram hoc loco deformandarum, ut ex his eruantur contratio columnæ.

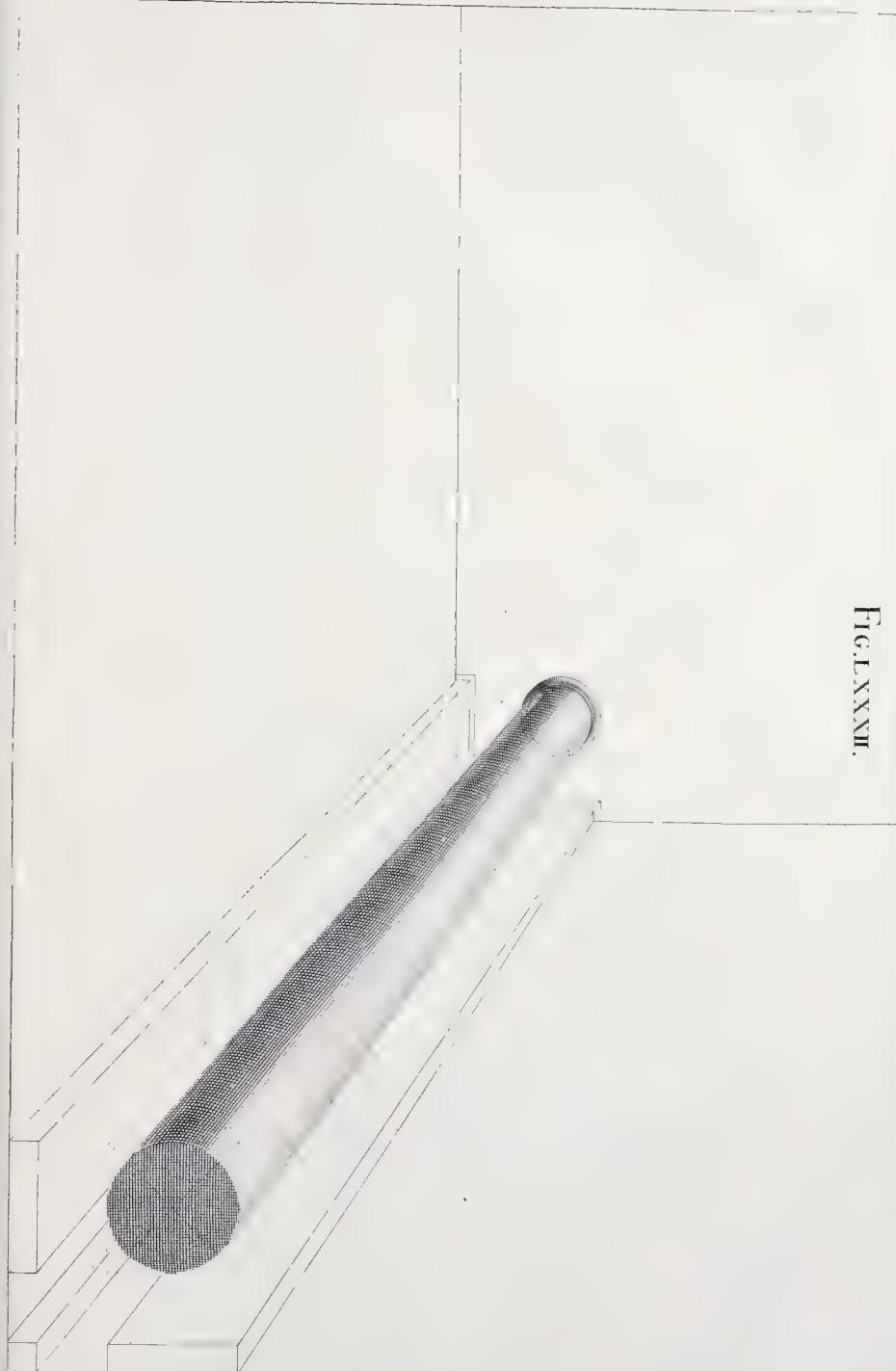


Hic autem soli suas umbras addidimus, ut clarius apparet modus & artificium totius operationis. Ex his vides, quadrata & circulos in perspectiva horizontali omnino retinere suam figuram, eamque dumtaxat restringi paulatim & coardari: quicquid in contrarium & verbis & pennicillo docuerint Pictores nonnulli.



THE Plan and Elevation of the Pedestal delineated in the Twelfth Figure, gives also the Measures for reducing these Pilasters into Perspective ; from which the Contraction of the Column is taken. I have shadowed only this last, that the Manner of the whole Work might be the more conspicuous. By this you see the Squares and Circles in Horizontal Perspective always retain their Figures, without any Alteration, save that of being gradually diminished and made less ; notwithstanding what some Painters have taught and practised to the contrary.

FIG. LXXXII.



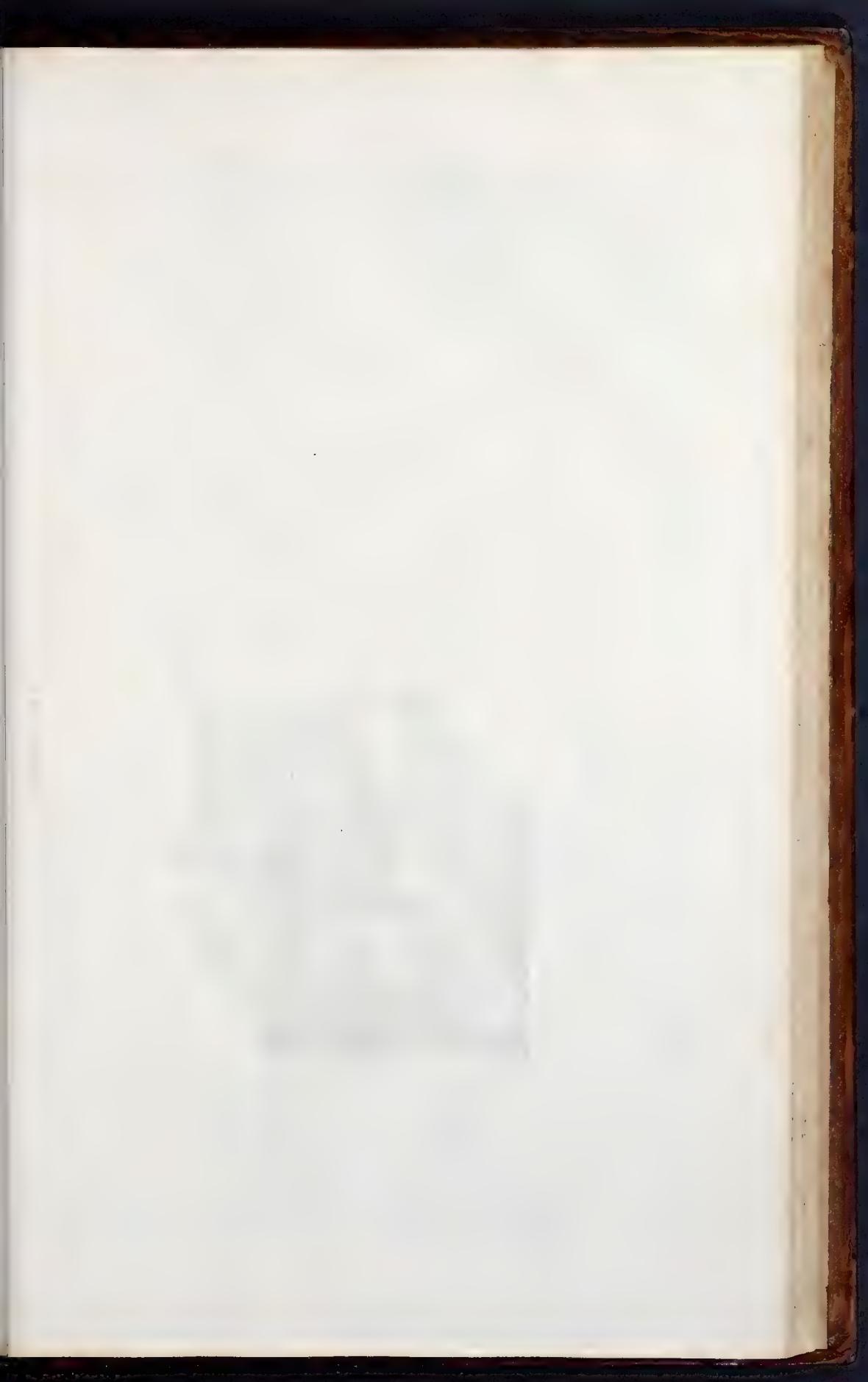


FIG LXXXIII.

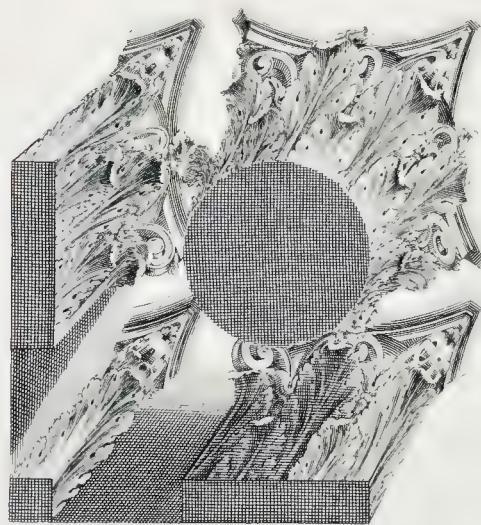


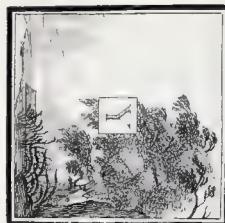
Figura Octogesimateria.

Capitella Corinthia horizontaliter contracta.



*ABES in hac paginâ deformatio-
tiones vestigii & elevations
capitelli Corinthii, quas de-
sumpsimus ex delineationibus
geometricis, transferendo men-
suras earum in lineas plani-*

*A B, & elevationis A C, ita ut facillime di-
gnosci possit unde nascantur singule partes ca-
pitellorum nitidorum. Nihil dubito quin defor-
mationes horizontales sis experturus faciliores
verticalibus quas dedimus figurâ vigesimaquarta.
Nam in horizontalibus gyrus foliorum circulis
clauditur, quorum centra mutantur latitudes
à suis vestigiis in punctis 1, 2, 3, 4; altitudines
verò à capitellis elevations in punctis 5, 6, 7, 8.*



Eighty-third FIGURE.
*A Corinthian Capital horizontally con-
tracted in Perspective.*

OU have in this Plate the Perspective both of the Plan and Elevation of the *Corinthian* Capital, drawn from the Geometrical Descriptions, by transferring their Measures into the Ground-line A B, and into that of the Elevation A C; so that you may readily discover from whence every part of the finish'd Capital is produc'd. I don't doubt but you'll experience these horizontal Perspectives to be much less difficult than the vertical propos'd in the Twenty-fourth Figure. For in these the Circuit of the Leaves is determin'd by perfect Circles, whose Centers take their Breadths from the Plan at the Points 1, 2, 3, 4; and their Heights from the Capitals of the Elevation, at the Points 5, 6, 7, 8.

Figura Octogesimaquarta.

Coronix Corinthia.

Eighty-fourth FIGURE.

A Corinthian Cornice.

I faciende sunt cornices que habent angulos, i.e.
ratio geometrica A reperienditum non latos, at
torum sc̄ptio B. Coronation est astum, ut vesp-
erinae partim, quas fingeret volamus inambore co-
lannis, non oblitus cornicis distributioni modulorum.
Ad contractionem elevationis A & sectionis B, in
lineam plani EF & elevationis E G transforme opor-
tet planctia diversariorum latitudinum, quas habent in e-
levatione A rotundus cyathii, Zophori, & corone, ducento ex his lineis ad punctum
occuli ; in partem vero FH transforme oporet puncta longitudinum, duen-
do lineas ad punctum distante. Hac industria perficius stranque deformationem,
quarum non erunt minus vestigia, altera elevationis. Utroque autem designatis
lineas terminatus pinnatum cornicis, a sectionem C & D.



F you are to delineate Cornices having Angles,
admit the Elevation A to represent one Side,
and the Section B the other. But Care is to
be taken, that the Breaks of those Parts which
are suppos'd to be set directly over the Co-
lumns, do not obtruct the regular Distribution
of the Modulations. For contracting into Pe-
spective the Elevation A, and the Section B,
you must transfer into the Ground-line FF, and into that of the Eleva-
tion EG, the Points of the several Breaths made by the Projections of
the Architrave, Freeze, and Cornice of the Elevation A ; and from them
draw Lines to the Point of Sight : Then on the Part FH of the Line FE,
you must note the Points of Length, and draw Lines from them to the
Point of Distance. By this Practice you complete these two Contractions,
one of which does the Office of a plan, the other that of an Elevation,
It's also requisite, that you draw the Out-line of the Members of the Cor-
nice on each side the Angle, & the Sections C and D.

FIG. LXXXIV.

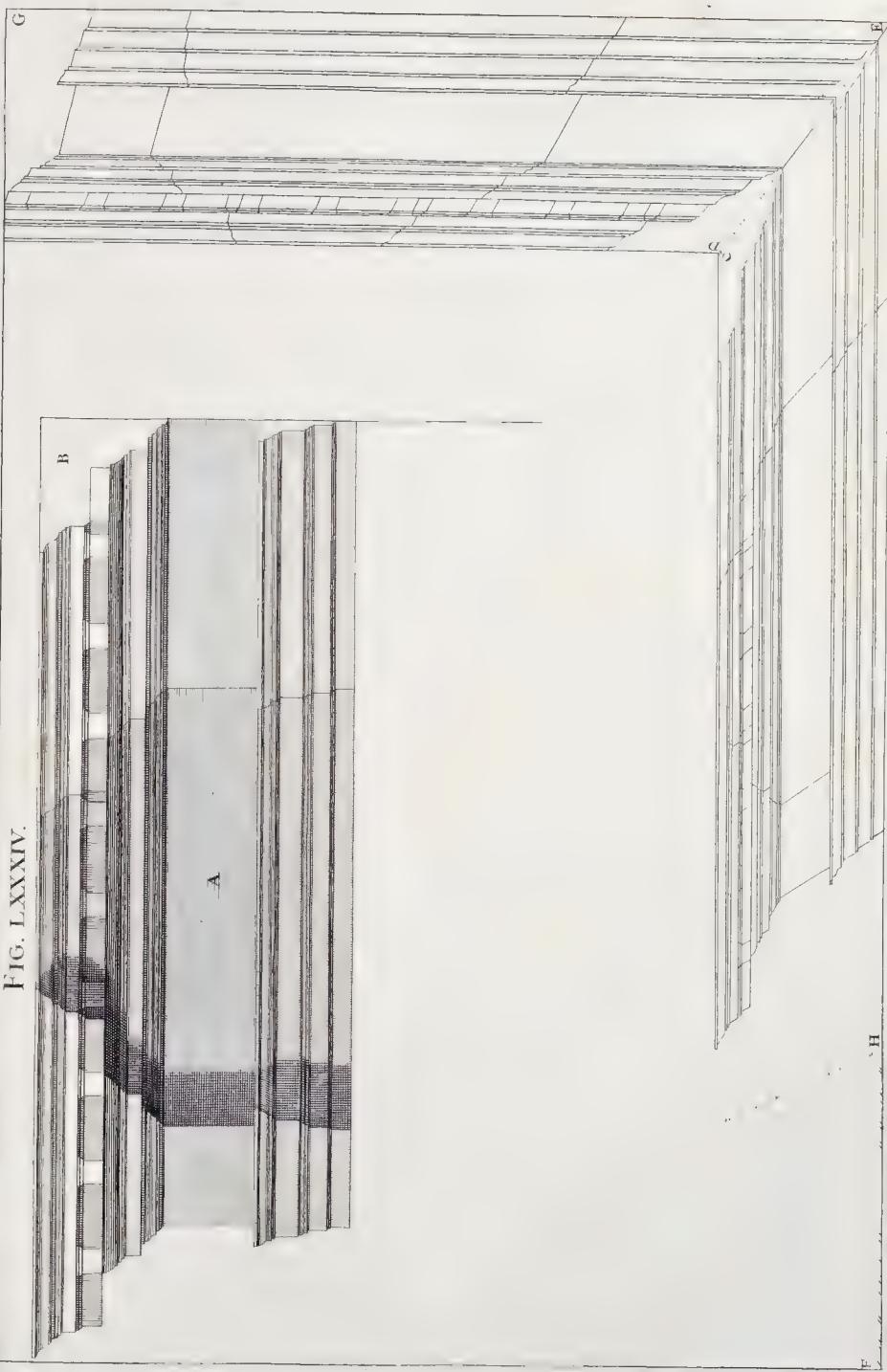




FIG: LXXXV.

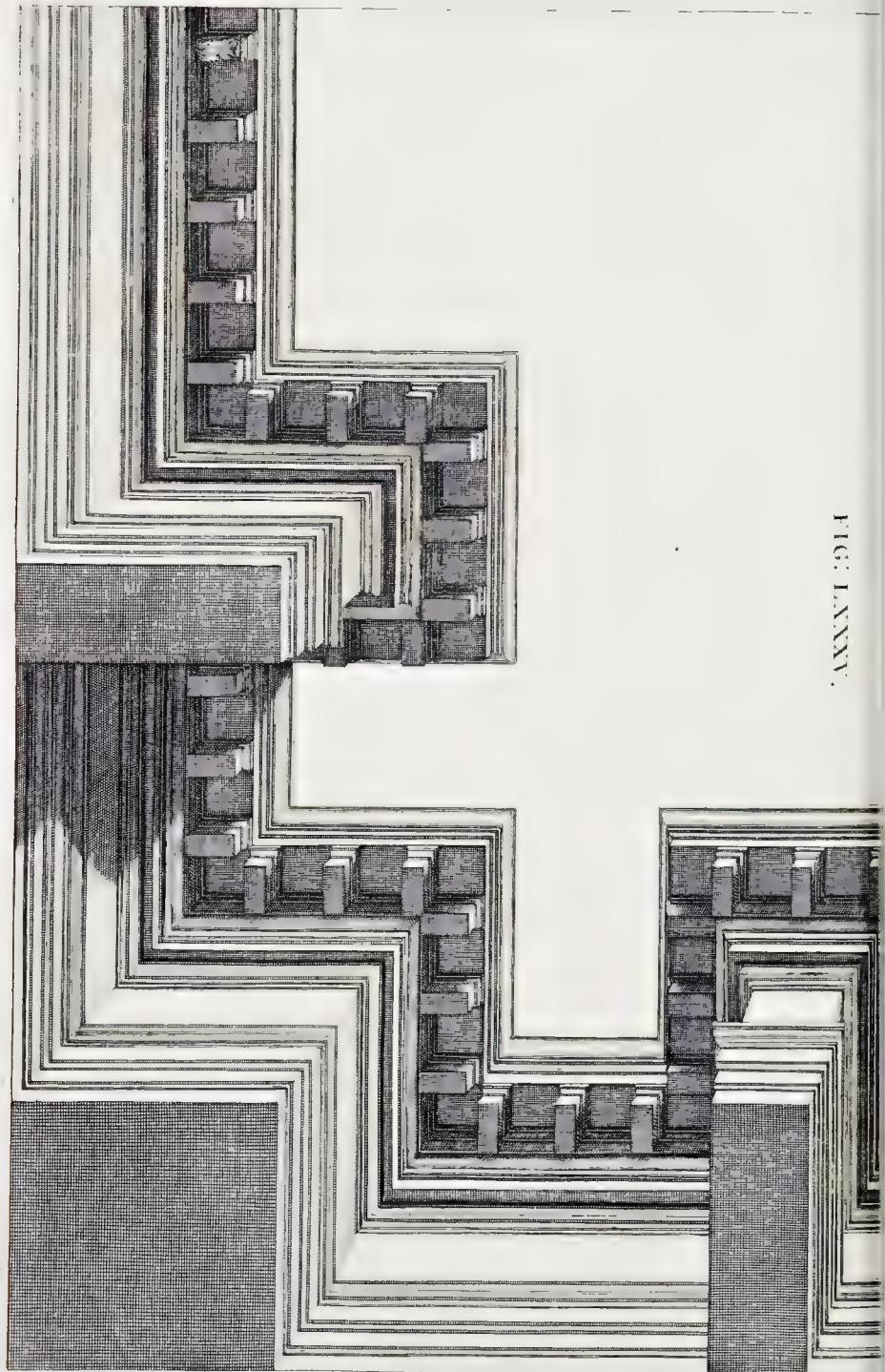


Figura Octogesimaquinta.

Coronix Corinthia horizontaliter
contracta.



OLIDITAS coronis cum omnibus projectariis eruta est ex vestigo & elevatione figure octogesimaquarta. Hic autem finem imponimus partibus rerum, ad integra edifica gradum facturi.

The Eighty-fifth Figure.

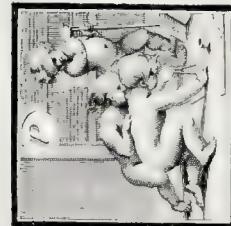
A Corinthian Cornice in Horizontal Perspective.



HE Solidity of this Corinthian, with all its Projectures, is deduced from the Plan and Elevation of the foregoing Figure. With this therefore I shall conclude the Description of Parts of things, and proceed to that of entire Structures.

Figura Octogesimasexta.

Horizontalis projectio columnæ.



O S T Q U A M figillationem divisionum matulam, foliatam, columnam & coronem, omnia tibi coniugere placuit: ita clarissimis apparabit quoniam di- spone oporteat delineationes geometricas, ut ex his eruantur projectiones horizontales.

Linea plani est CD, perpendicularis CL. In A est elevatio geometrica longitudinis columnæ, (supponimus columnam delineari veluti jacentem hanc.) In B ejus vestigium geometricum, cum divisionibus latitudinis in linea ER. Puncta longitudinis transferuntur in lineam plani CG, puncta altitudinis EC transversor in CF, ducento rectas ex divisionibus CG ad punctum distante, ex divisionibus CF ad punctum oculi. Profections vero visus CO eriguntur perpendiculari, & complebitur elevatio H, ex qua eructur columna nitida L.

Si super vestigio M formare placet altiam columnam, ejus latitudines accipi- endæ sunt ex columna B; ac lectio projicenda est in N, ut ex hac tangquam ex elevatione eructar columna P. Si altiam columnam in angulo altere libatum fuerit, ope sectionum H N facile illam complebis.

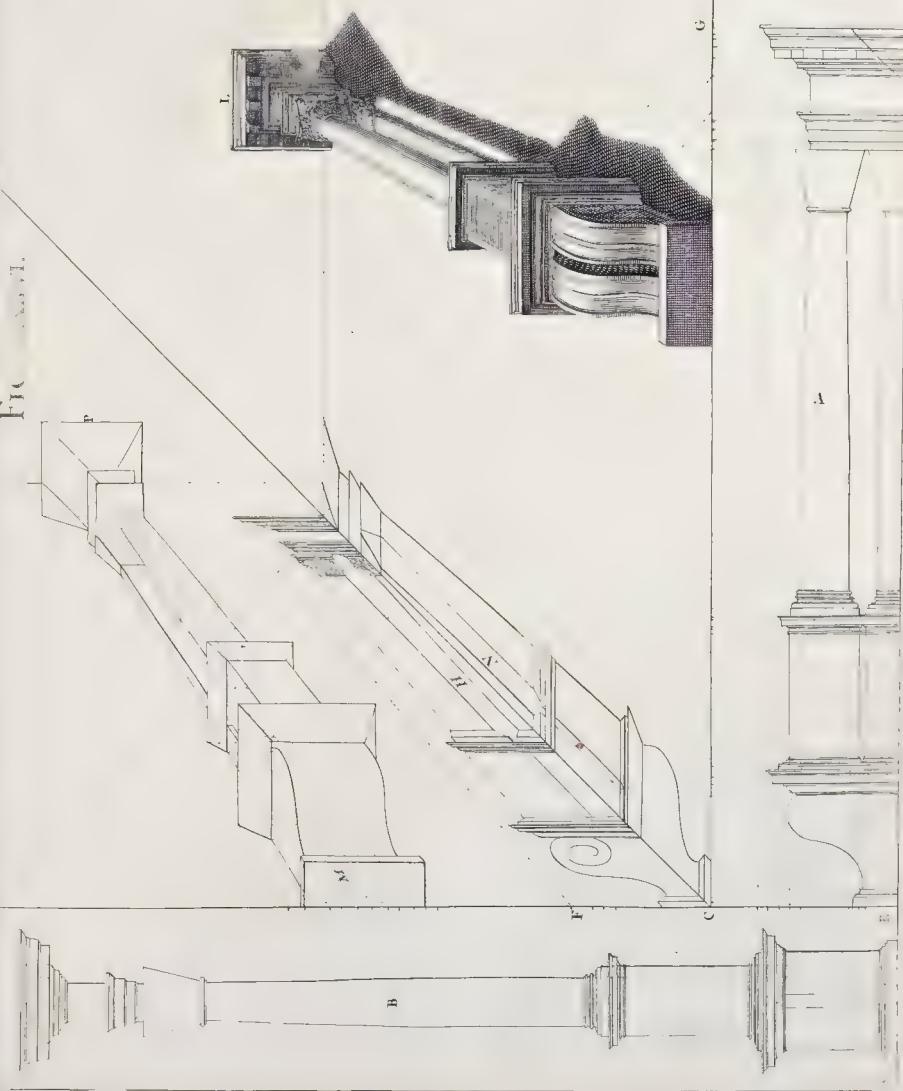
The Eighty-sixth Figure. A Column in horizontal Perspective.



FTER the separate Description of a Corbel, Pedestal, Column, and Cornice; I have here conjoin'd them all, that you might the better perceive how to dispose Geometrical Elevations for the Bushness of horizontal Perspective. The Line of the Plan is CD, the Perpendicular CL; the Geometrical Elevation of the Length of the Column, suppos'd to be lying on the Ground, is A. The Geometrical Plan thereof is B, with the Divisions of its Breadth on the Line ER. The Points of Length being transferr'd on the Line of the Plan CG, and the Points of Height EC into CF; from the Divisions of CG Lines are drawn to the Point of Distance; and from thole of CF to the Point of Sight. From the Sections of the Visual CO, Perpendicularly are erected, and the Elevation H completed, from whence is taken the finish'd Column L.

If upon the Plan M you would delineate another Column, the Breadths thereof must be taken from the Column B, and another Profile design'd in N, which serves as an Elevation for making the Column P. If another Column were requir'd in the Angle, the Profiles H N affit you in the ready Performance thereof.

Fig. 1.



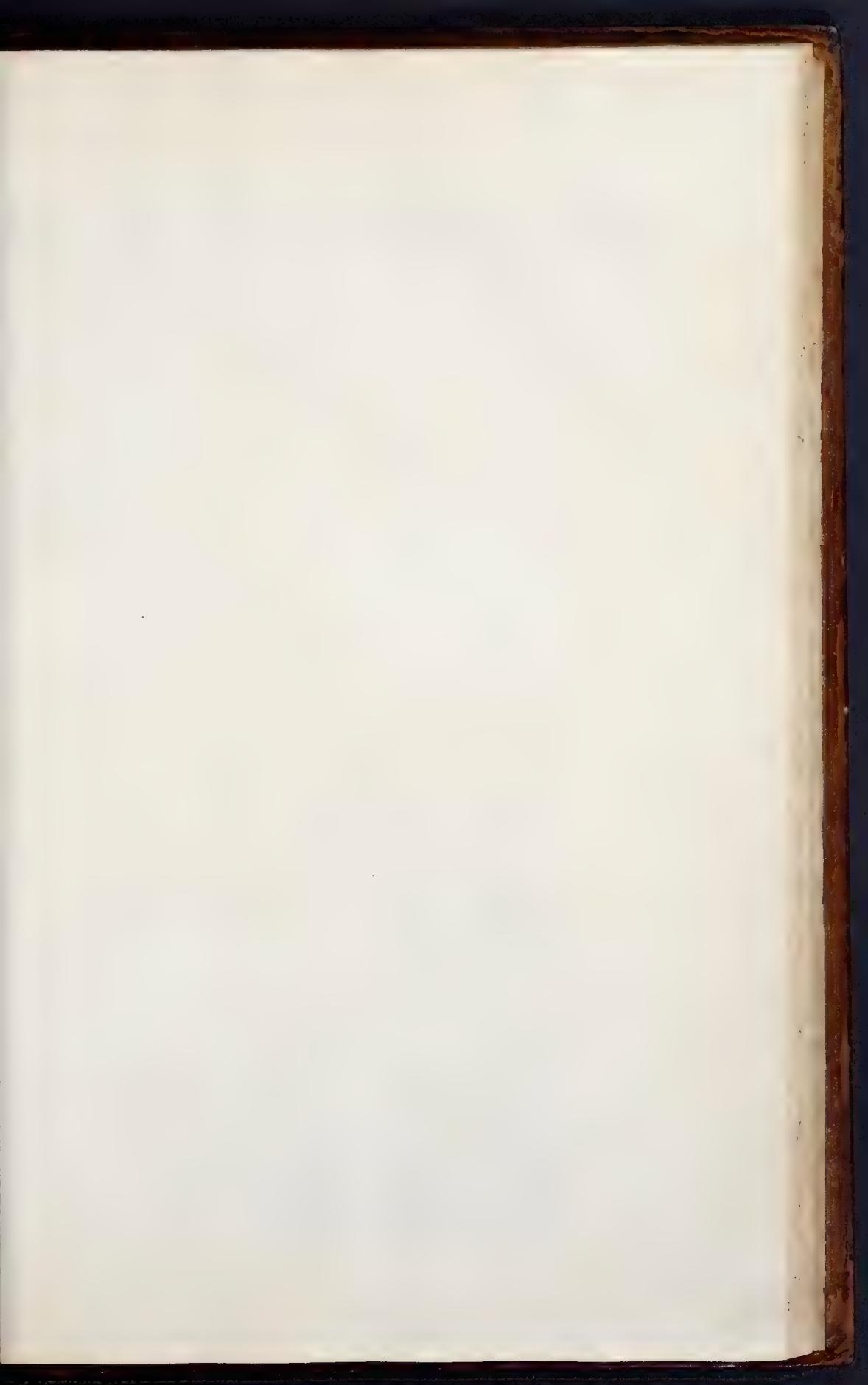


FIG. LXXXVII.

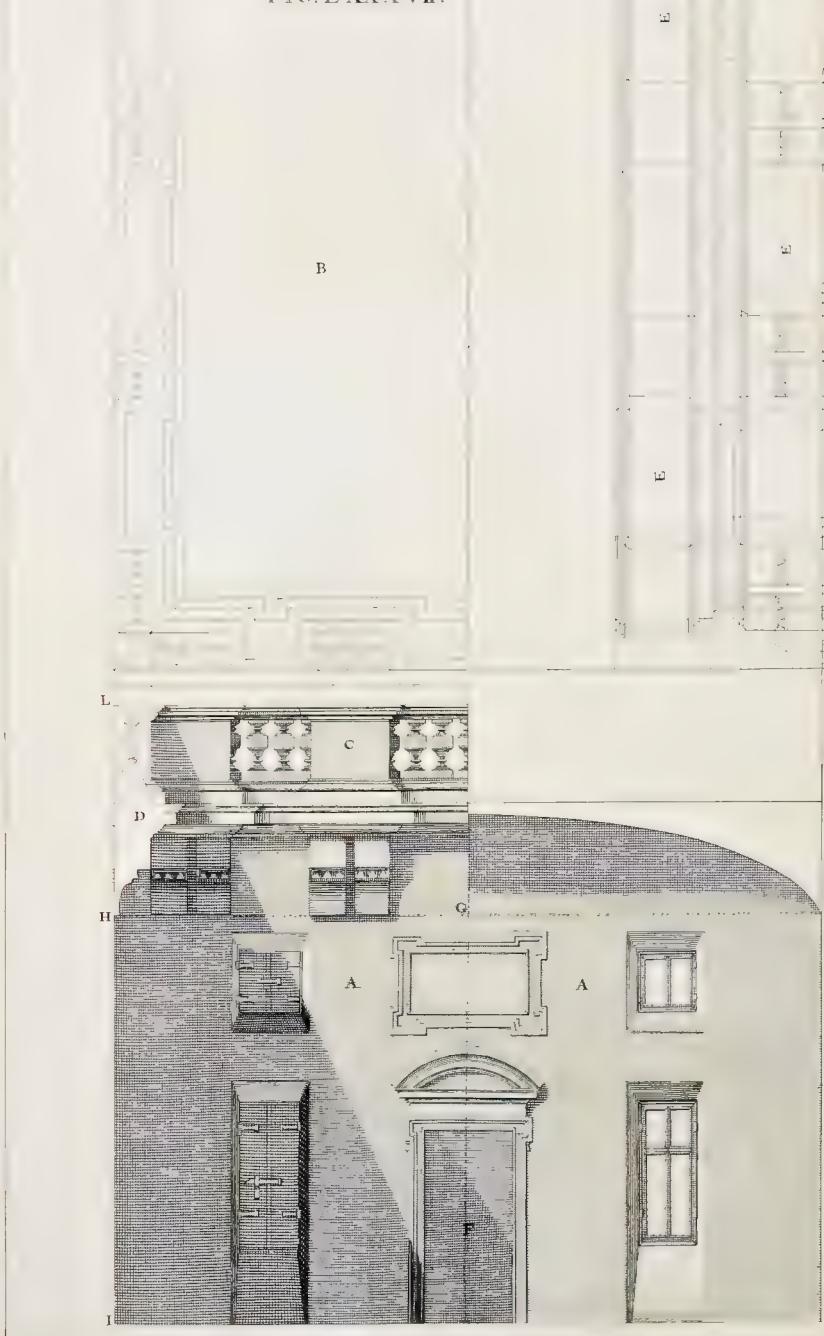


FIGURA Octogesima septima.

Præparatio necessaria ad sequentem figuram, & ad projectiones horizontales in laquearibus vel testudinibus.



XHIBET hæc figura in AA unum ex quatuor parietibus aulæ, cuius altitudinem veram IH velis attollere apparenter usque in L, pingendo in laqueari, vel in testudine, seriem balaustrorum. In B est vestigium geometricum quartæ partis laquear. In C habetur elevatio medietatis latitudinis. In D est sectio cornicis & mutulorum. In E posita est elevatio medietatis longitudinis. In F est punctum oculari, in G punctum distantiae: adique tota distantia est GF.

The Eighty-seventh FIGURE.

The Preparation necessary to the following Figure, and to all other horizontal Perspectives, whether on flat or vaulted Ceilings.



HE Figure AA represents one of the four Walls of a Hall, whose true Height IH you would have appear rais'd to L, by painting a Ballustrade in the Ceiling thereof. B is the Geometrical Plan of the fourth part of the said Ceiling; C is the Elevation of half the Breadth; D is the Section of the Cornice and Corbels; E is the Elevation of half the Length. In F is the Point of Sight, in G the Point of Distance; so that the Distance itself is FG.

Figura Octogesima octava.

Horizontalis projectio balaustrorum figuræ octogesimæ septimæ, cum brevi distantia.

Eighty-eighth Figure.

*The horizontal Projection of the Ballustrade of
the Eighty-seventh Figure, view'd at a small
Distance.*



LARITATIS gratia totum laquear balistum est in quatuor partes. Prima contact contractionem refigit & eleverit, quia his facilius methodo conserui. Nam linea AOV sit horizontalis, BC est linea plani. Prosternit oculi est O, distante E. Secunda pars contact sectionem L, que dat propositam multitudinem aliamque partitionem, defensiones ex sectione D figura elegans inservit, defensione cano in angulis B & C. Tertia pars compositionem intagrum sine umbra: ultima pars cunctam complectitur cum umbra.

Ob prosternum distante parum remotum à puncto oculi, nimirum amplitudinem ac deformem apparentiam habere videtur hoc delineatio. Nullumnam, si ex diffinita EO figuram sufficeret, omnis deformitas evanget.

Ut facies impensis fiat, industris Pictoris interrumpit paxim fibi genitum exemplar figuram Operum, in qualibet distante sit nimis brevis; nam multe pectorum oblongandum, in quo prostatum distante sit remotum à puncto oculi, quantum necesse est ad vitrandam omnem deformationem. Alterum vero, in ipsomet Operi clam usurpanendum.

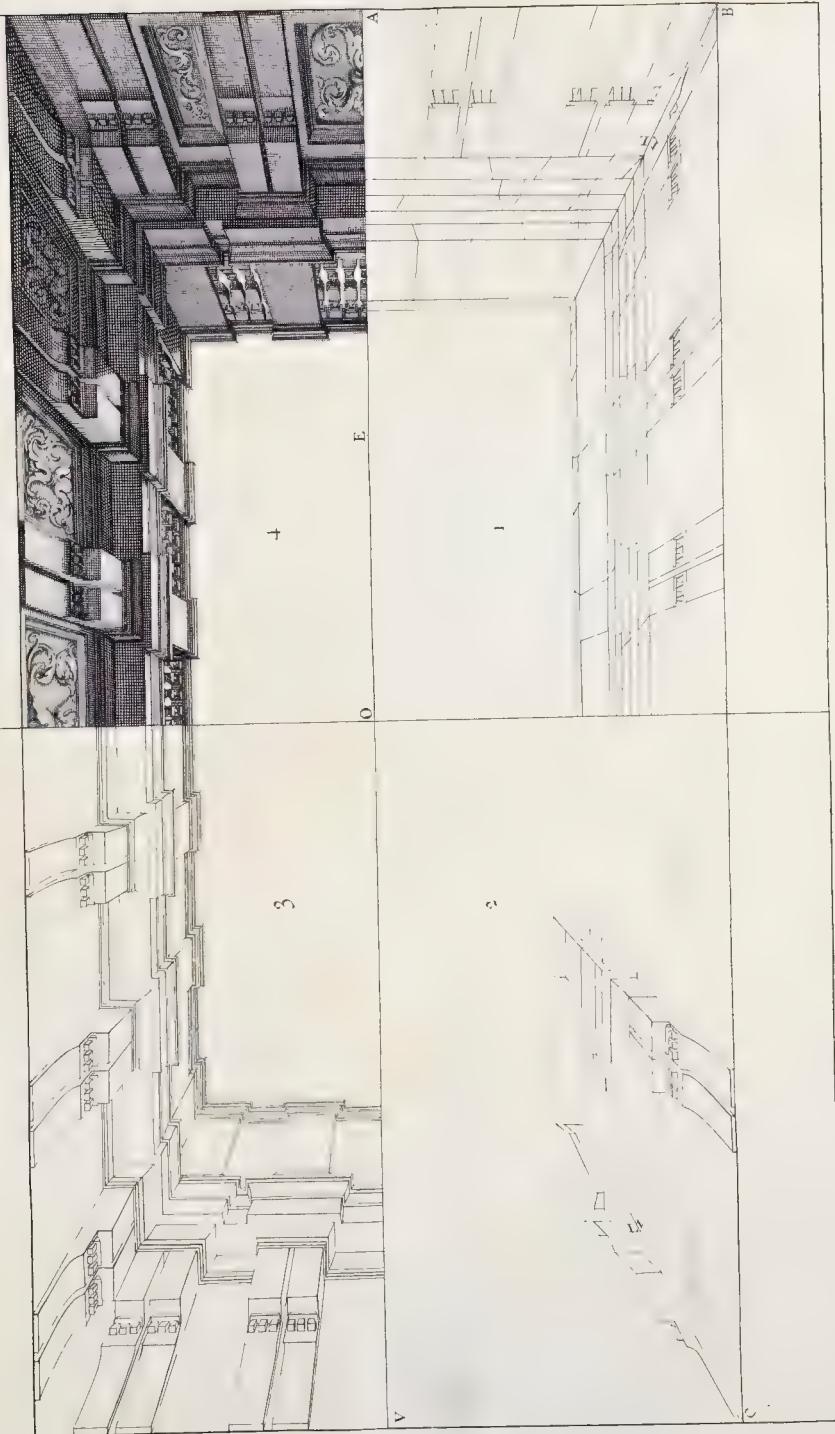
Si piugende sunt teftudines, aportet posse facere in eis reparationem precidiorum; que quasi difficulter est, & pectus expeditum negant, in aliud Opus iij. r. patet.

OR the better illustration of this Figure, I have divided the whole Ceiling into Four Parts, The first contains the Plan and Elevation in Perspective, after the usual manner; AOV being the horizontal Line, BC that of the Plan; the Point of Sight O, and that of Distance E. The second Part contains the Section L, which gives the Projections of the Corbels and other Parts taken from the Section D of the Eighty-seventh Figure, by drawing it in the Angles B and C. The third Part comprehends the Delineation of the Perspective without Shadows. The fourth Part contains the same wholly shadow'd and finisht.

Through the near Approach of the Point of Distance to the Point of Sight, you may perhaps imagine this Draught will appear too wide, and so have an ill Effect: But when once you view it from its due Distance EO, you will find all such Doubts vanish and come to nothing. When you have to deal with Persons unskill'd in these things, and are to paint for so small a Distance; your best way is to make two Draughts; one for publick Show, in which you may place the Point of Distance so far from the Point of Sight, as is necessary for preventing Deformity; and the other you may privately make use of in performing Your Work.

If you are to paint arch'd or vaulted Ceilings, a particular kind of Net or Lattice-work must first be made therein; the Performance whereof being difficult, and not capable of being explain'd in few words, I have reserved it for another Volume.

FIG. LXXXVIII.





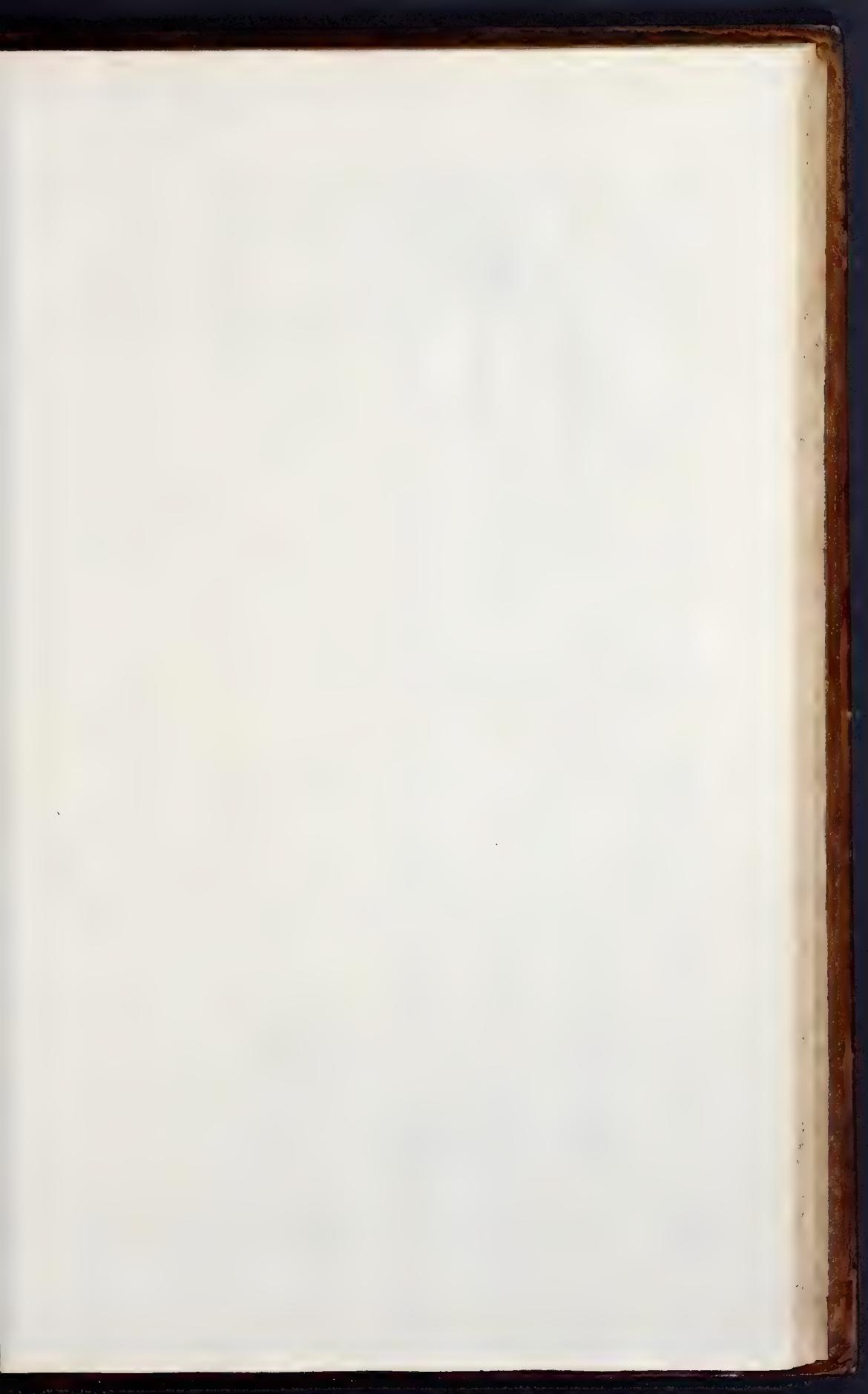


FIG. LXXXIX.

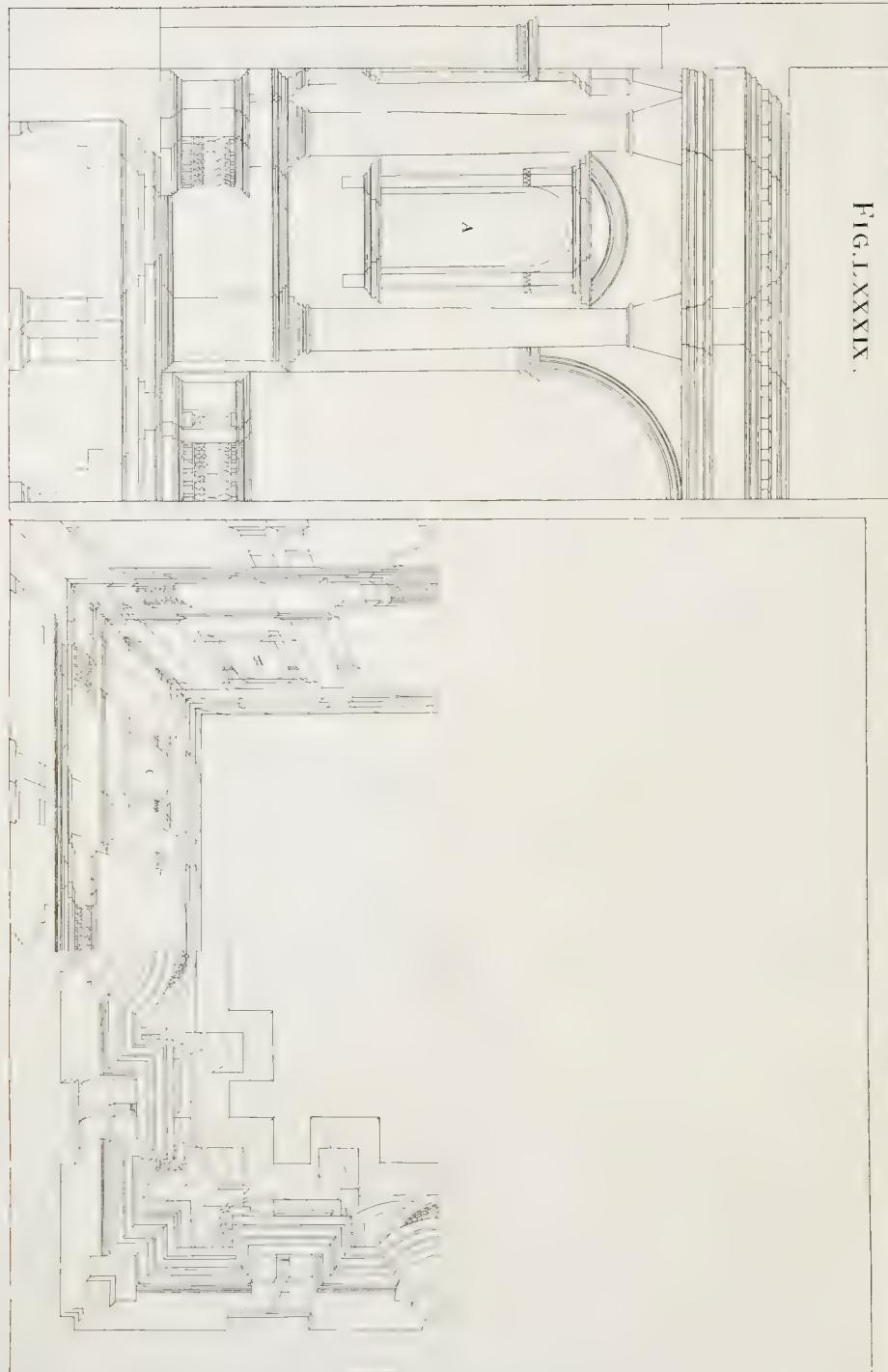


Figura Octogesimanona.

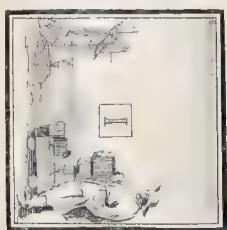
Horizontalis projectio architecturae
in laqueari quadrato.



I laquear sit quadratum, &
valde diffans ab oculo, ar-
chitecturam huic similem in
eo depingere licebit. A est
elevatio geometrica; eadem
verò deformata in B & C,
gerit minus vestigii & elevationis. Medietas
unius ex quatuor partibus, usi eff potest in
toto opere, aut premando chartam, aut eà per-
forata, immittendo per foramina carbonem mi-
nitissime conusim.

Eighty-ninth FIGURE.

*An horizontal Projection of Architecture
in a square Ceiling.*



F the Ceiling be square,
and very remote from the
Eye, you may paint in it
some such Piece of Archi-
tecture as this. A is the
geometrical Elevation; the
same reduc'd into Perspective in B and C
does the Office of a Plan and Elevation.
The Half of one of the four Parts may
suffice for the Draught of the whole Work,
either by tracing over the Lines of the Pa-
per, or by pricking small Holes therein,
and pouncing them through with Char-
cole finely powderd.

FIGURA Nonagesima.

Horizontalis projectio tholi.

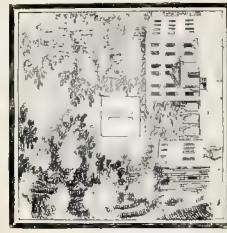


*N*ONAGESIMA figura nec a rectilinea geometria, sed ea que
con circulum diligenter collamat; aliis lineis aliquantum
descindit, ac praevideat & unius figuram & cornicem.
Est planus ab AB horizontali C.D. perpendiculari AD.
Post hunc actus est O, distantia D: alioquin si linea base de-
bet indecere, quod ratione situacionis sit. C. radices, equali-
fertur, aut extra ipsam theorem, ut qui cum a triangulo,
minus latitudine eius, ad plus subtracta est, a distante & de-
cimatio: faciat & id continetur, si rationem cult est in
medio. Itaque finita linea F, transversa per forum
AG linea A.D. extansum, I: et obliqua transversata in H: &
ex omnibus his pointis frontis vidulis ad O. Dandi, illudicere metu, ut distans nostra fortiorum
fundamentorum tum spissis, tum lateris, transfluit in ianam AB, & posita, sit, trans fronte re-
cte ad partitum diffinitum D. Ubi autem hic fons: ibat in AO, ex quo ex parte nascitur,
quoniam latus cum vidulis HO, dicitur enim pro frustis, meane, hinc rectificatus AG
ducatur, et latus communis columnae, et ceterum, quod invenimus, ita excep-
tio currit, quia est elevata geometria. Hoc igitur, in isto, non solum, ut in
circulis in perpendiculari E O, centrisque perpendiculari HI, IN, & in quadrilatero LM
post circulus N, pro summa cornicis: longitudine ST, in isto Q.R., & in & solitus,
et quoniam autem per rectas ex angulis regulari, et quadrati, et hexagoni, et octagoni, et
circularium numeri 12, 18, 24: linea vero laterale, non enim, ruderat ad contra faciem, inde-
lata, ut videre est in N, 3, 4. Haec regula, ne minime, ut opinio, mutatis circumstans,

*Ex his patet neccitanus facili regulum geometrum, tunc tamen, ac non sufficiens uspi-
ciam, unius columnae; quam fungit peculiaris rectarum desinaciones. Quoniam autem Opus
quoniam a linearium in projectum ferit, ipsum, ad unius non potest ex parte extensari, spe-
cialiter, ratione, hinc levius adire operari, tanquam, & unius, & unius: una communis
circulum. Figura autem functionum in projectu, & tria, rursum, at in, ut ultime, inveni-
emus circumferentias.*

The Ninetieth Figure.

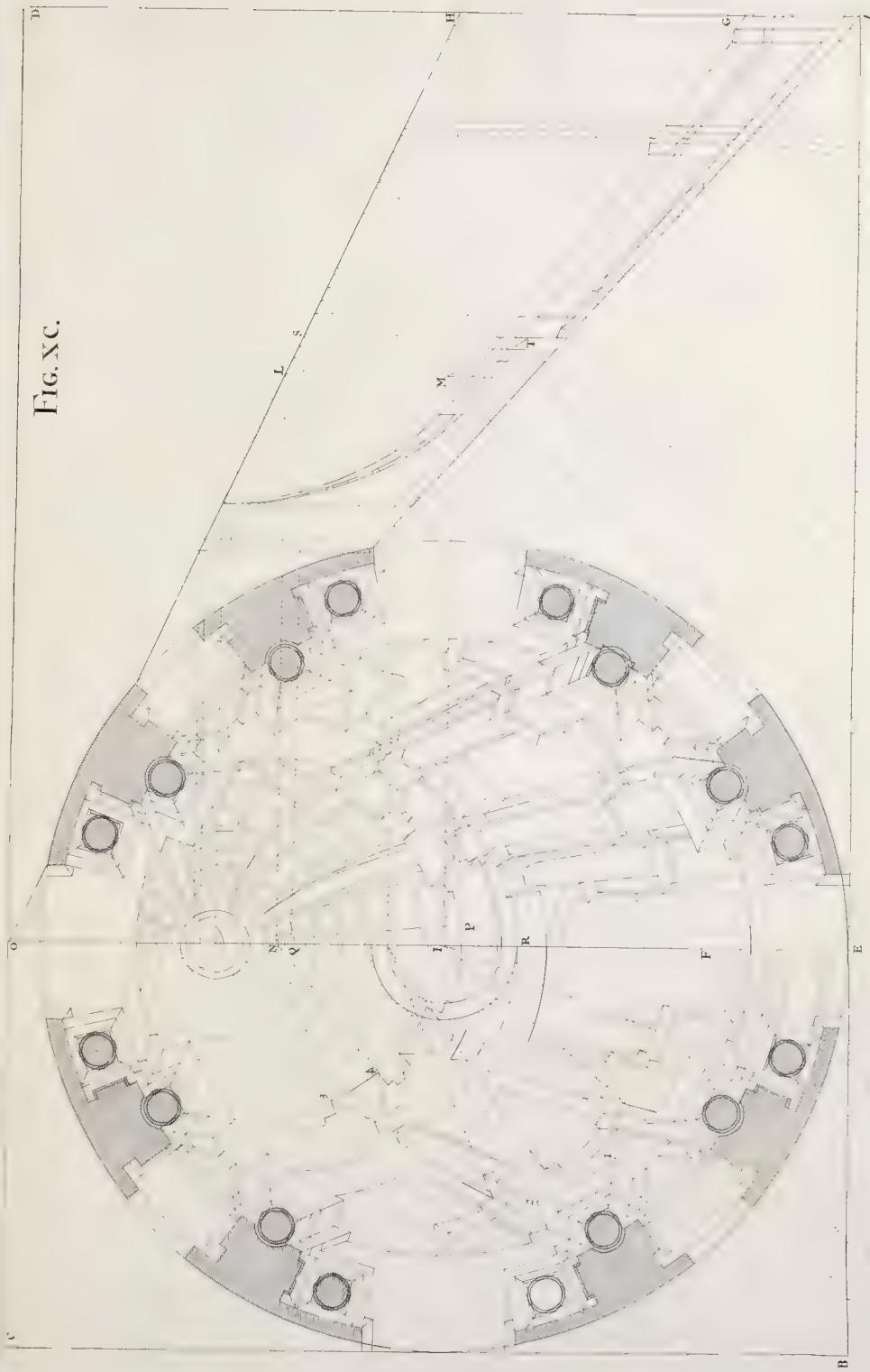
A Capola in horizontal Perpective.

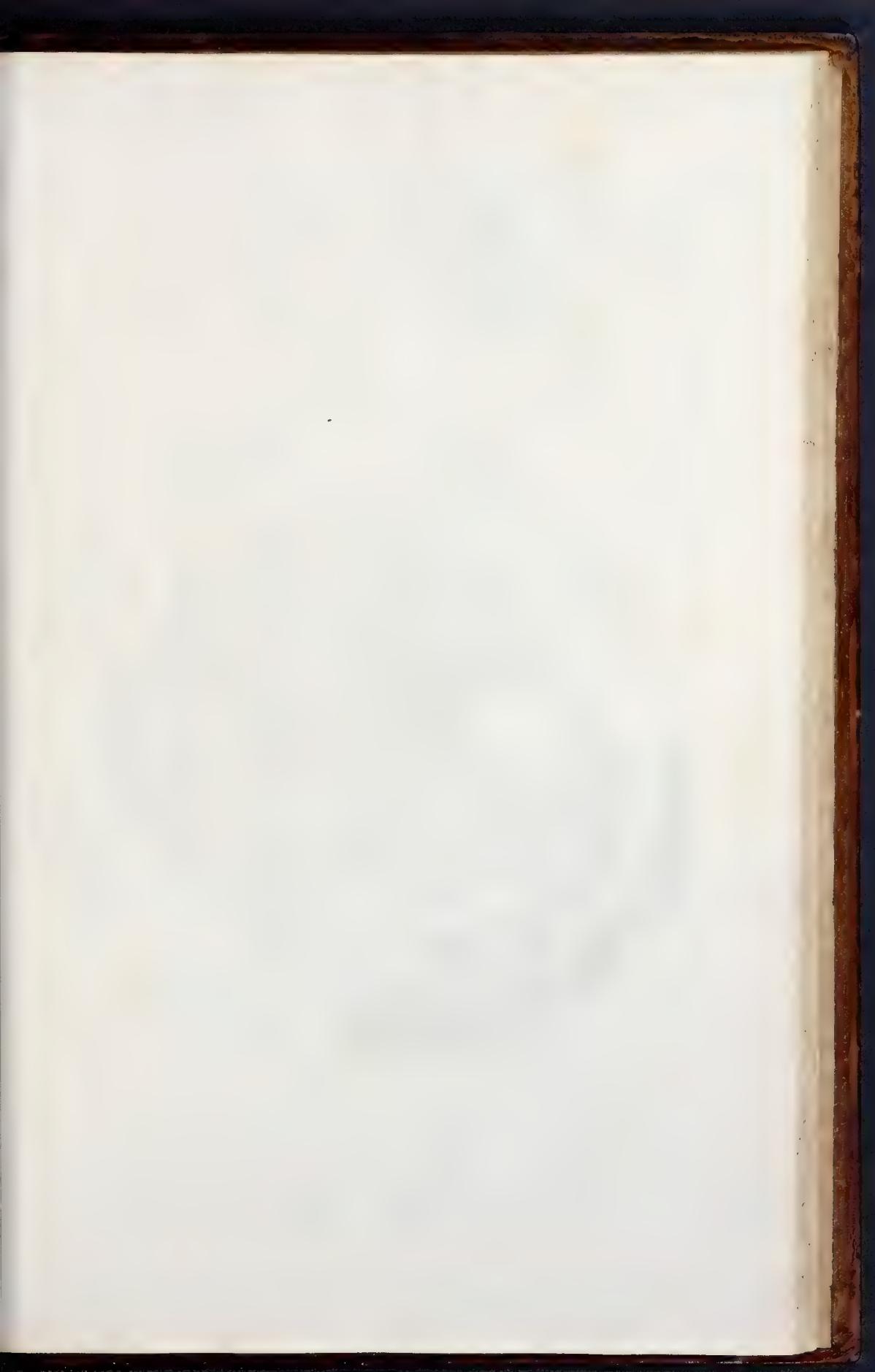


*N*on the Execution of this Work you are to begin with
the Geometrical Plan; in which the two Ranges of
Circles denote the Columns, the other Lines the
Pedestals, with the Projections and Breaks of the Bases
and Cornices. The Line of the Plan is AB: that of
the Horizon CD, the perpendicular Line is AD. The
Point of Sight is O, that of Distance D: wherefore
this Figure ought to be placed as much above the Eye,
as the Height DO. I have set the Point of Sight
somewhat without the Cupola, that the Eye might
be less weary'd in viewing the Works, and embrace
more of the Architecture, than it could have done, had the Point of Sight been in the
middle. The Points of the Line E.F. are transfer'd into A.G, part of the Line A.D.
The Center of the Pan I is continu'd to H, and from all these Points visual Lines
are drawn to O. Then placing the Heights of every part both of the Cupola and
Lanter on the Line A.B, from the Points of those Divisions draw Lines to the Point
of Distance D; and where they cut the Visual AO, erect Perpendiculars intersect-
ing the Line HO; which Points are the Centers of the several Circles. On the Vi-
suals, between A.G. must be determin'd the Outlines of the Columns and Cornices,
in like manner as when a Geometrical Upright is rais'd from a Plan. This done,
you proceed to the Delination of the Cupola itself in Perspective, by transferring in
to the Perpendicular EO the several Centers of HO, by parallel's to HI, as L.N., &c.
On the Center, with the Interval L.M, delibere the Circle NP, for the Nose of the
Cornice: and with the Semidiameter S, describe the Circle QR, and so of the rest.
The Numbers 1, 2, 3, 4, shew how the breaks of the Cornice are determin'd by Lines
from the Angles of the Geometrical Plan tending to the Point of Sight, till they interlace
the Circle: The Returns of which Breaks are made by Lines tending to the Centers
of their respective Circles: as is Plain from N, 3, and N, 4. In this Plan I have
omitted the Corbels, lest I should too much encumber the Work.

*Hence appears the Necessity of making the Geometrical Plan of the whole Cupola,
the Plan of a single Column not being sufficient; by reason each requires its particu-
lar Delination. And when the Work itself is to be drawn for painting, You can't
well take it from a small Draught in way of Network or Squares, but the visual
Lines should be drawn in their proper places, and the several Centers found: in which,
by fixing Strings, you may readily see the Circumferences of all the Circles,*

FIG. XC.





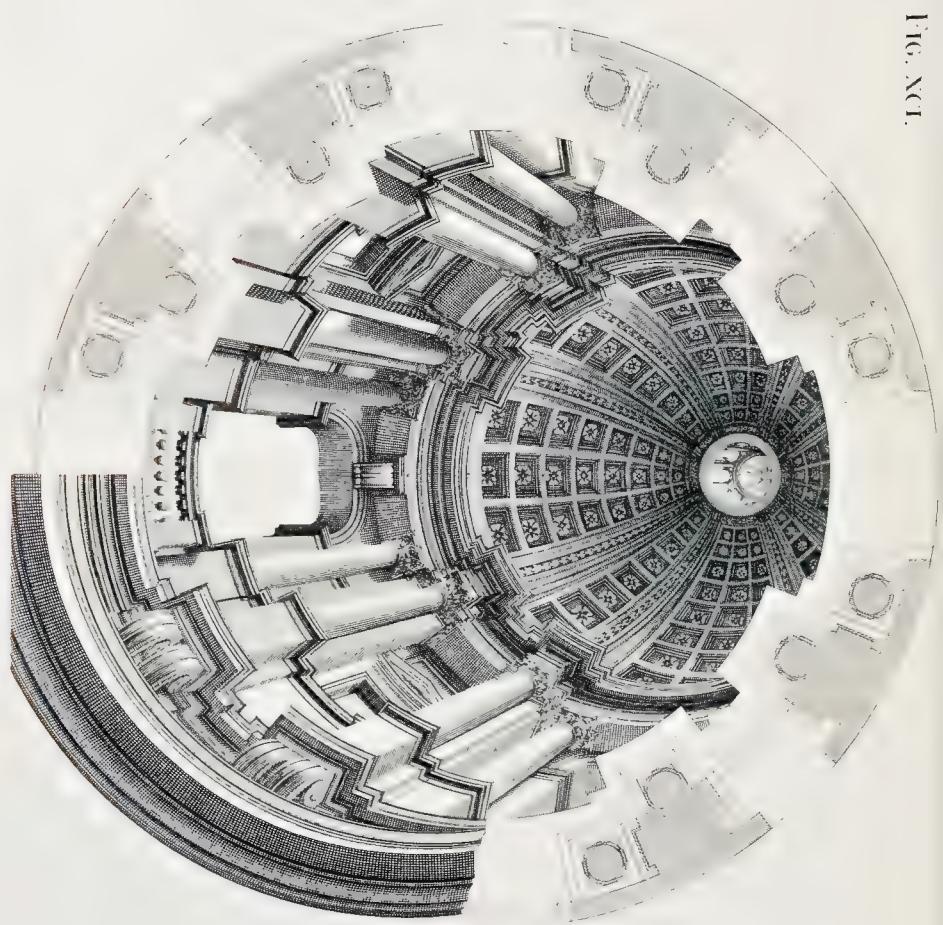


Figura Nonagefinaprima.

The Ninety-first Figure.

Tholus figuræ nonagestima, cum luminibus & umbris.



HOLUS quem vides in hac paginâ, pollicetur sibi citam diuturniore illo, quem super telario piano insignis amplitudinis, depinxi anno 1685. in Templo S. Ignatii Collegii Romanî. Prinde se casus aliquis illum absimat, non deverbunt qui ex ipso eundem in melius reficiant. Mirati fuerunt Architecti nonnulli, quod columnas anteriores mutulis imposuerim, id enim in solidis ædificiis ipsi non facerent. Verum cōmetu omni liberavat amicissimus mibi Pictor, ac pro me lþppondit, damnum omne se statim reparaturum, si satifcentibus mutulis, columnas interpræceps ruere contingat.

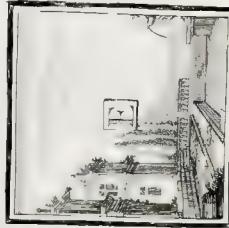


S. Ignatius of the Roman College, anno 1685. HE Cupola in this Plate will in all Likelihood be of longer Duration, than that which I painted on a very large Table, for the flat Ceiling of the Church of

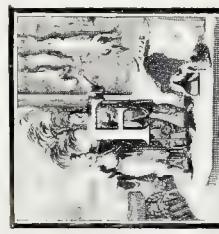
For if that suffer by any Accident, with the help of this its place may be supplyd by a better. Some Architects dislik'd my setting the advanc'd Columns upon Corbels, as being a thing not practis'd in solid Structures; but a certain Painter, a Friend of mine, remov'd all their Scruples, by answering for me, That if at any time the Corbels should be so much surcharged with the Weight of the Columns, as to endanger their Fall, he was ready to repair the Damage at his own Cost.

Figura Nonages. secunda.

Tholus octangularis.



X circulo fit octagonum, accipiendo medietatem quadrantis circuli, ut habeantur angula latera octagoni. In ejdem lateribus diffribetur regfum geometricum rotundum architecturæ, cum projectoris omnium membrorum, iuxta modum quem servavimus in hinc circulari figure nonageſime. Utilliter etiam fieret elevatio geometrica totius Operis; quamvis ob ſpatii anguitias ego eam uniforme. Deinde poſitæ ſunt cupidas circini in centro circuli, extundatur alia cupida ad aliudrum fangularum projectuarum inter ſpatium A & B, ut hic vias: atque ope parallelarum, omnia tranferuntur in linem CD, ut fiat opica deformatio, quam poſit ſectio elevations, cum aliis preparacionibus, ut in figura præcedenti. Nam hic quoque ope circulorum invenire apertum planum extremam in prominentis membrorum fangularum architecturæ: ut coniungendo planum per lineas rectas, que ferment facies octagoni, compleatur totius Operis.

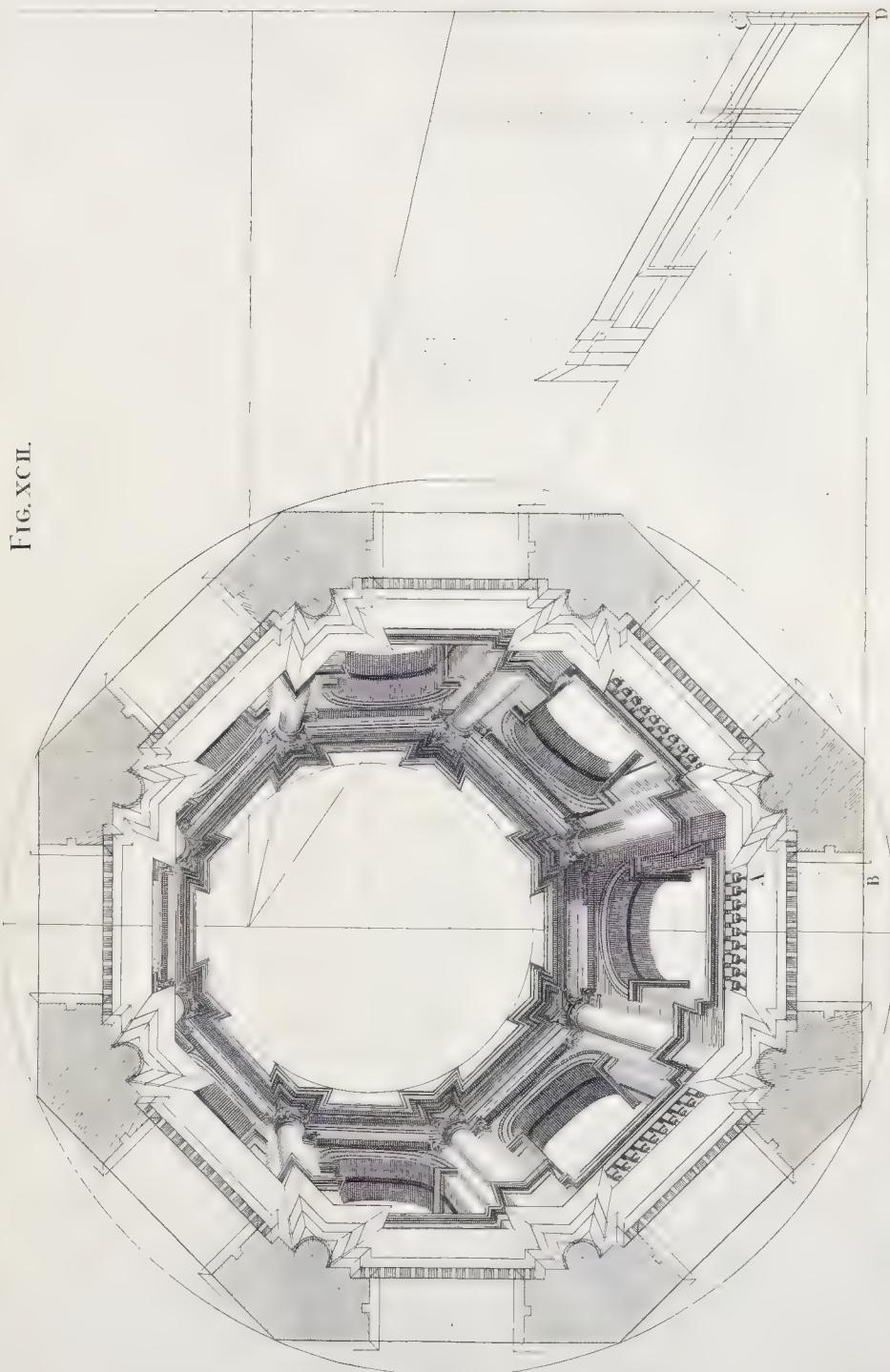


Ninety-second Figure.

An Octangular Cupola.

ROM the Circle describe the Octagon, by taking half the Quadrant of the former for each Side of the latter. On thicke Sides the Geometrical Plan of the whole Architecture is to be disposed, with the Projections of all the Members thereof, in the fame manner as was done in the circular Border of the Ninth Figure. It will also be expedient, to make the Geometrical Elevation of the whole Work, tho' thro' Want of Room I have here omitted it. Then placing one Point of the Compas in the Center of the Circle, extend the other to the Height of the ſeveral Projections between A and B, as you ſee in the Figure; and by help of the Parallels transfer them all into the Line CD, for putting the Profile of the Upright into Perpective, and drawing the other Requieres, as in the foregoing Figure. For here alſo, by means of the Circles, are found the extreme Points of the Projections of the ſeveral Members of the Architecture; and by conjoining theſe Points with ſtraiſt Lines agreeable to the Shape of the Octagon, the whole Work is completed.

FIG. XLII.





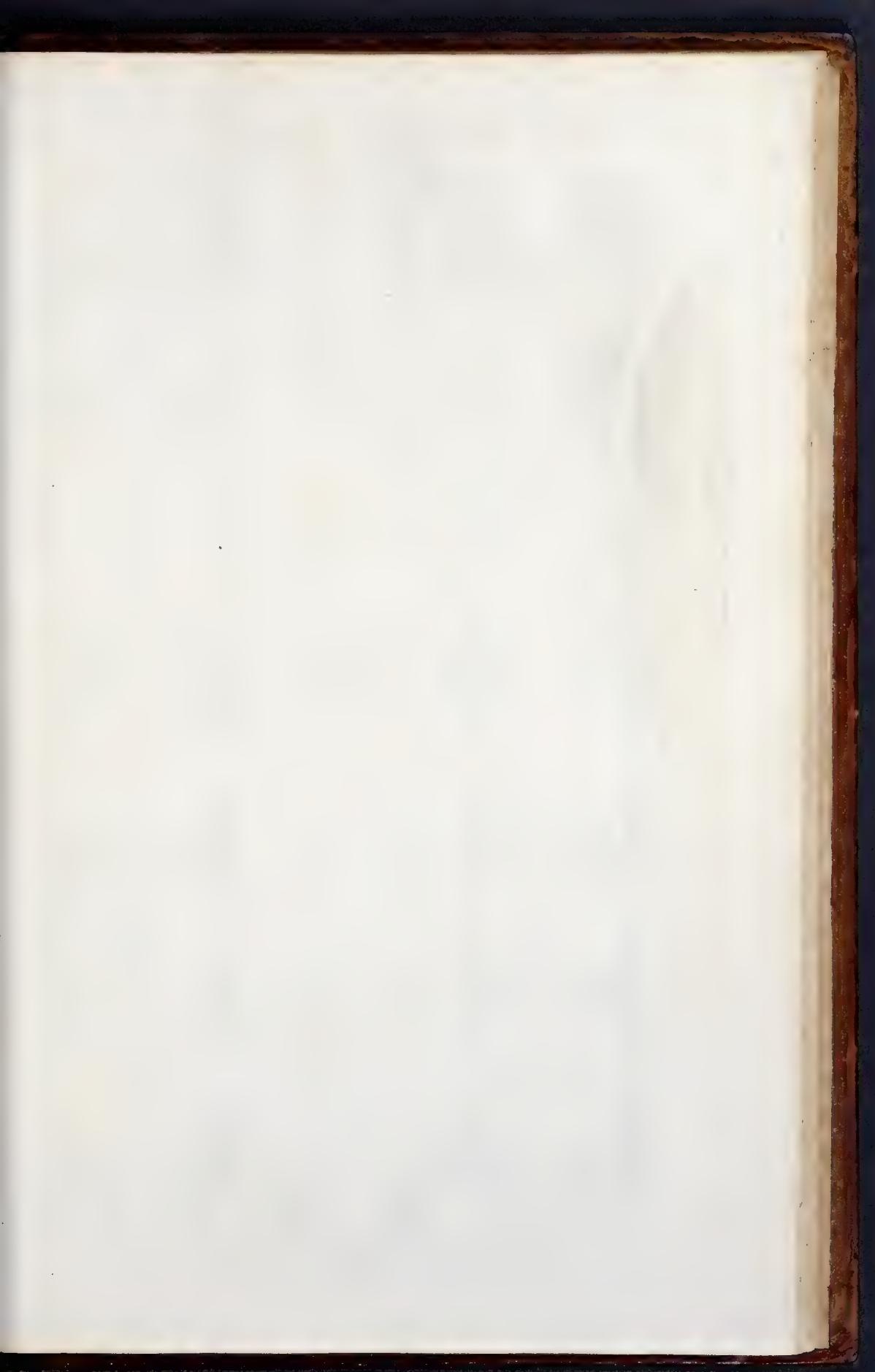


FIG. XCIII.

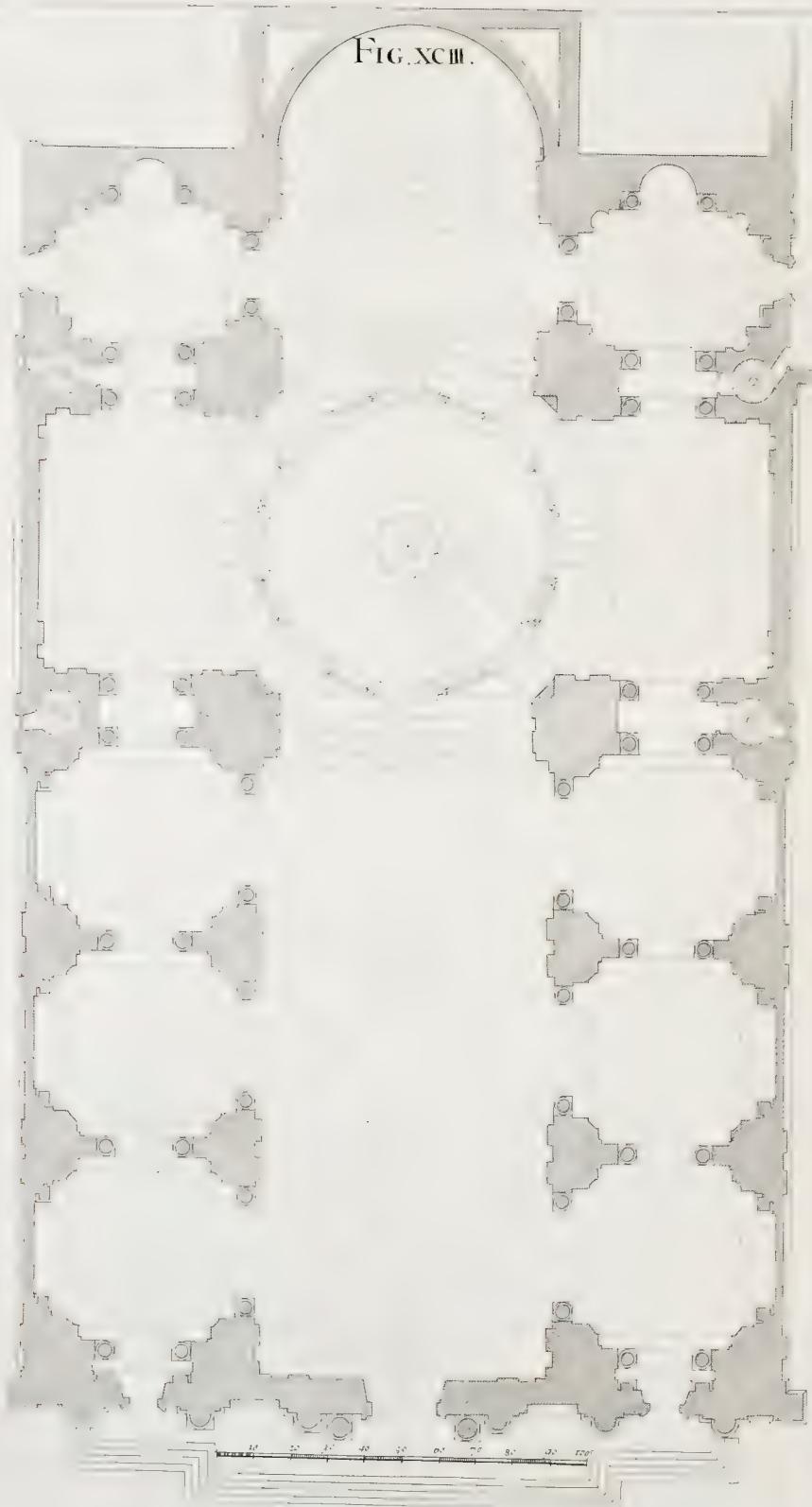


FIGURA Nonagesimateria.

Vestigium templi Ludovisianni S. Ignatii almæ urbis.



Perspectivæ regulas, earum rerum Studiosi absolvere nequeant.

Exhibit hec figura vestigium totius templi. Quamvis enim non indigeam nisi testudine inter januam maximam & tholum ; proderit nihilominus Architecturæ Studiosis, universi Operis elegantiam ac symmetriam per optimum contemplari.

ONSTITUERAM huic Libro finem imponere figurâ nonagesimaseunda ; nihilominus ut satisfaciam precibus amicorum, cupientium addiscere modum reticulationis opticae, quæ adhibetur in superficiebus irregularibus, ejusque memini figurâ octogesimaoctava, publici juris facere decrevi ejus construenda methodum. Ipsiusmet retis ope delineavi non solum ædificium mos representandum, sed etiam figuras omnes testudinis templi Ludovisianni, in qua pingendâ nunc occupor. Eademque reticulatione, quæ erit ultima figura hujus Libri, dabimus Operi nostro suum complementum ; quam nulla sit superficies, in qua suas delineationes juxta

The Ninety-third FIGURE.

The Geometrical Plan of the Church of S. Ignatius at Rome:



Had once determin'd to end this Book with the Ninety-second Figure ; but at the Request of some Friends, who were desirous to learn the Making of Perspective Net-work for irregular Surfaces, as was hinted in the Eighty-eighth Figure ; I resolv'd to publish the Manner of performing the same. By the Help of this Net-work, I delineated not only the Architecture now to be treated of ; but also each Figure in the Vault of the Church of S. Ignatius, which I am at present employ'd in painting. The Method is laid down in the last Figure of this Book, and entirely completes the same ; there being no Superficies, how irregular soever, but the Studious may thereon describe, by these Rules, whatever Perspective he has occasion for.

This Figure contains the Plan of the whole Church ; for though my present Design requir'd no more than the Vault of the Nave, between the great Door and the Cupola ; I thought it might be nevertheless acceptable to the Curious in Architecture, to have a View of the whole Design, so celebrated for the Elegancy and Proportion of its Parts.

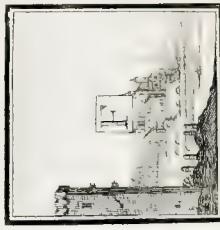
Figura Nonagesimae quartæ.

Orthographia templi Ludovianæ.

Ninety-fourth FIGURE.

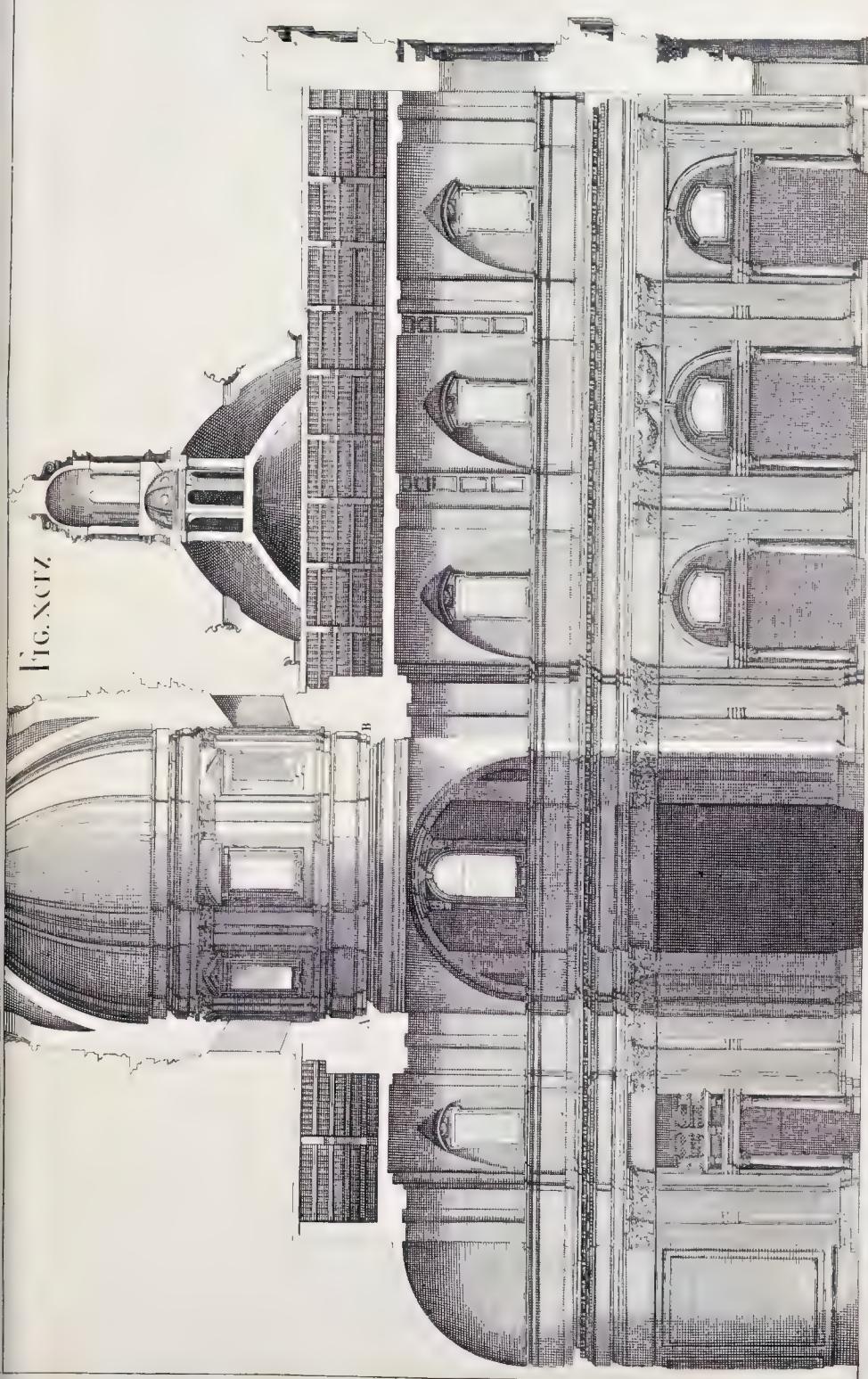
*The Orthography, or Geometrical Elevation of
the Inside of S. Ignatiuss Church.*

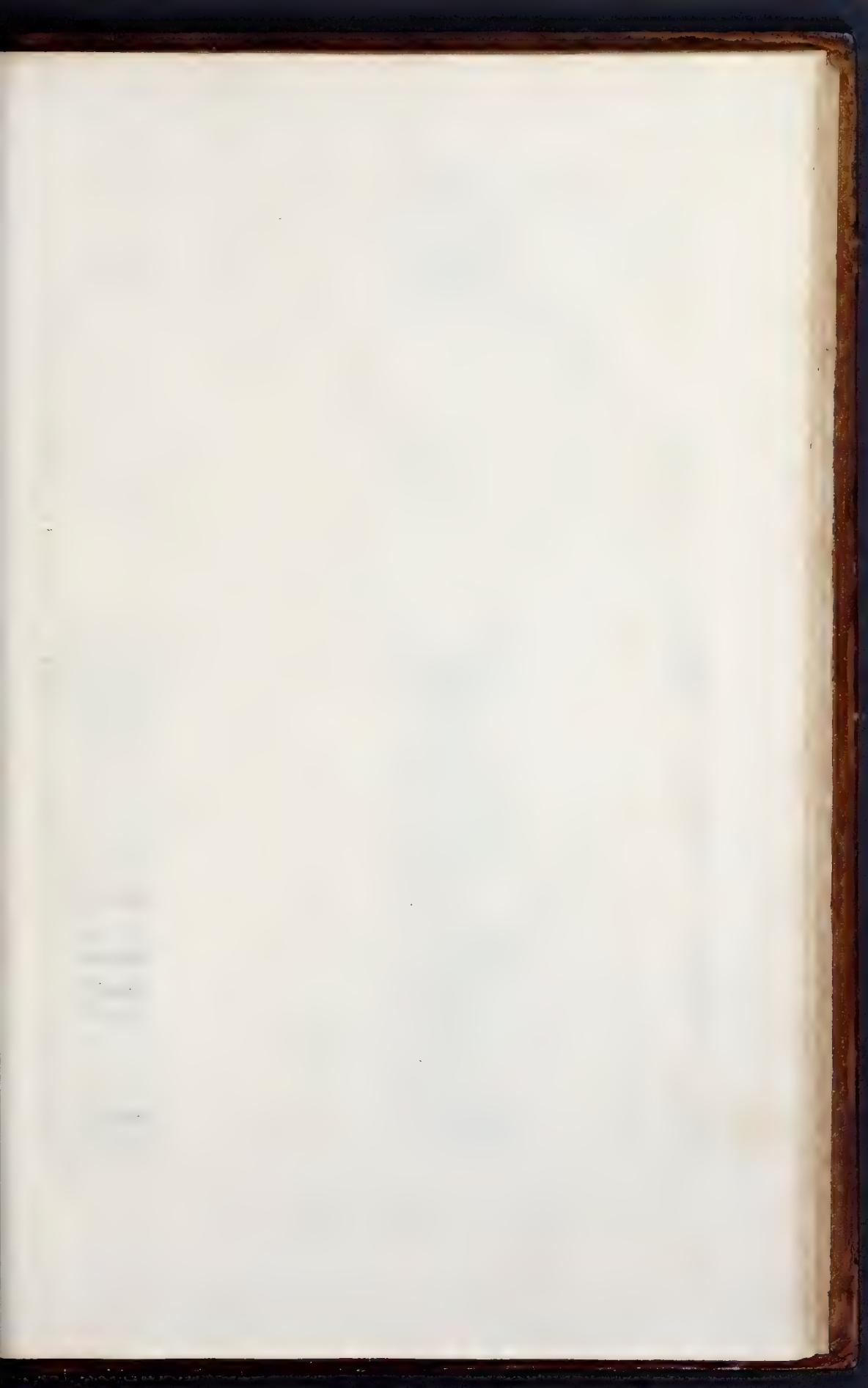
*T*magis tibi gratificer, orthographiam seu elevationem templi Ludovianæ in longum disseci delineari, cum omnibus mensuris quo vestigio sunt communes; addito tholo juxta idem Autoris. Ejus autem nondum constructi loco, positum est in A & B telarium cum tholo depicto, de quo supra in figuris nonagesimi & nonagesimaprimiti.

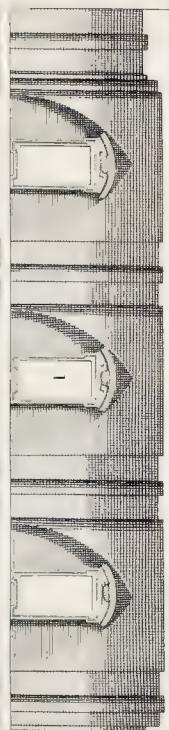


OR your greater Satisfaction, I have here given the Geometrical Upright of the Church dissected lengthwise, with all its Measures agreeable to those of the Plan ; as also the Cupola designed by the Author: Which nor being yet built, instead thereof is placed between A and B, the painted Cupola before describd in the Ninetieth and Ninety-first Figures.

Fig. XCII.







4



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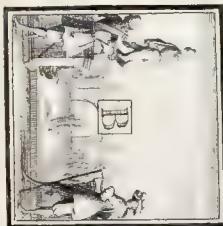


Figura Nonagesim. quinta.

Aliæ præparations ad figuræ nonagesimam
mamoëtavam & nonagesimam ammonam.



X hoc figura in quatuor partes divisæ, dices ex uno initato methodo, qua sicut applicatio optio[n]e delineacionem templi Ludovisiæni. Primi pars ex h[ab]et latus dextrum tribulibus inter ianam templi ac abhunc. Secunda pars contracta est in eisdem tribulibus, arcuris ac lundulis difundit. Tertiæ pars continet latus dextrum tribulibus, usque ad summationem fenestrarum, unde incipit Architectura quam pingimus in formice. Quarta pars est vestigium geometricum formicæ, cum prominentia quam habent arcus in summatione jam dictæ fenestrarum. Finimus autem emolum esse fundatorem, tum edifici depicti, tunc navis templi; scilicet enim columnæ, que respondunt pilis templi, prominent extra edificationem.



Y this Figure divided into four Parts, you will at first Sight perceive the Method I observ'd in beginning the Perspective Design of this Church of S. Ignatius. The first Part shews the right-hand Side of the Vault between the Door and the Cupola. The second contains the Plan of the same Vault, with its Arches and Lunettes. The third Part represents the same right-hand Side, to the top of the Windows; where begins the Architecture painted in the Vault. The fourth Part contains the Geometrical Plan of that part of the Vault which is painted; with the Lunettes made by the Arches above the Heads of the aforesaid Windows. The Disposition of the Painted Architecture above, is the same with that of the Nave of the Church; save that, answerable to the Pilasters below, I have suppos'd Columns projecting over the Work.

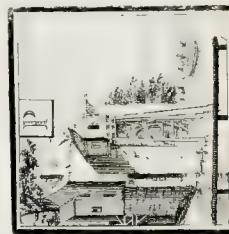
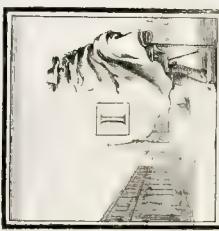
The Ninety-fifth Figure.

Other Preparations to the Ninety-eighth and Ninety-ninth Figures.

Figure Nonagesimafexta.

Aliæ præparations ad figuræ nonagesimafextam & nonagesimam monianæ.

RIMA pars figuræ hujus mifariam diſſe, repreſentat e-levationem geometriam lateris templi ſupra coronicem, & ædificii in teſtudine pingendi. Secunda pars complectitur ar- cum teſtudinis maximum, & elevationem geome-tricam faciei ejusdem ædificii. Tertia pars exhibet veſtigium totius ædificii pingendi in teſtudine, cuius amplitudo cadem eſt cum amplitudine mavis, ut antea dicebamus. Porro veſtigium geometricum non nimis neceſſarium eſt ad pin-gendam ædificium, quia ad ipſum ex materiis ſolidū extiendum, ut alibi monimus.



The Ninety-sixth Figure.

Other Preparations to the Ninety-eighth and Ninety-ninth Figures.

In this Figure, which consists of three parts, the first represents the Geometrical Elevation of the Right-side of the Nave above the Cornice, and of the Design painted in the Vault. The second contains the great Arch of the Vault, and the Geometrical Elevation of the Front of the said Design. The third part shews the Plan of the whole Work painted on the Vault, the Extent and Disposition of which is the same with that of the Nave, as beforemention'd. The Geometrical Plan, as I have formerly hinted, is no less necessary for the painting a Design in Perspective, than it is for rai-ning a Structure with ſolid Materials.

FIG. XCVI.

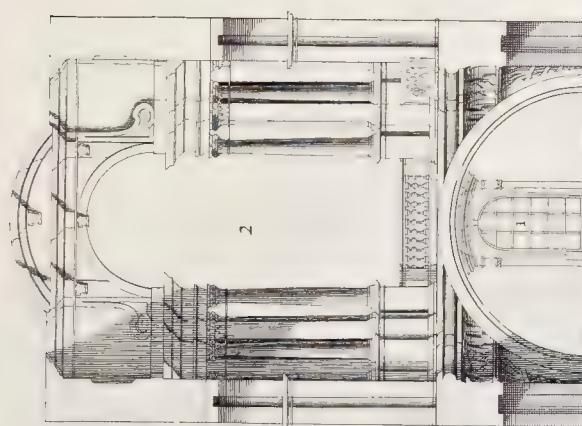
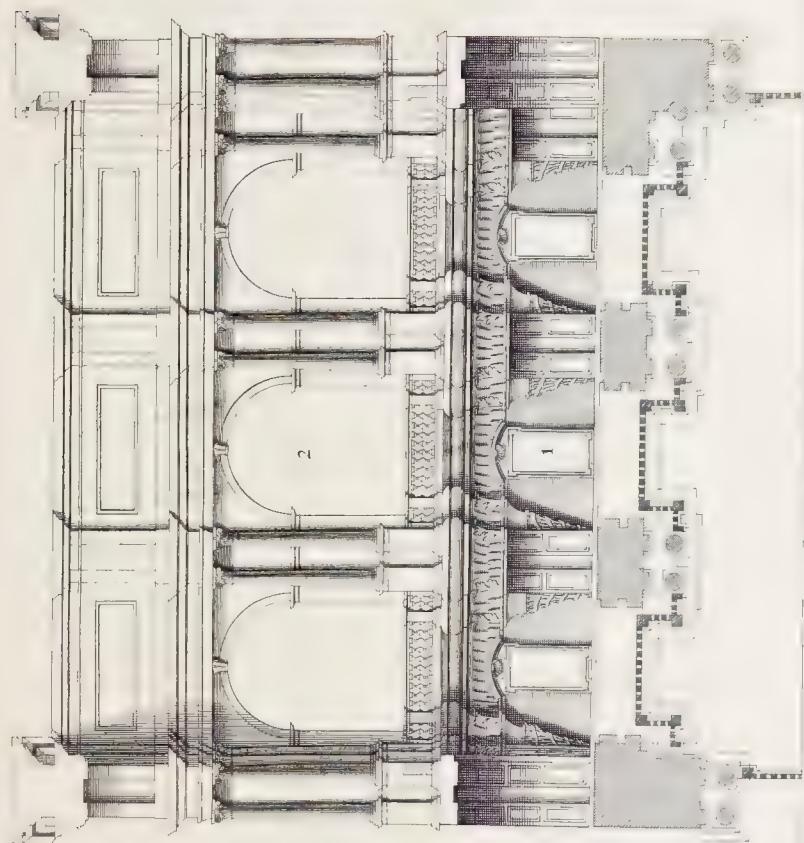






FIG. XCVII.

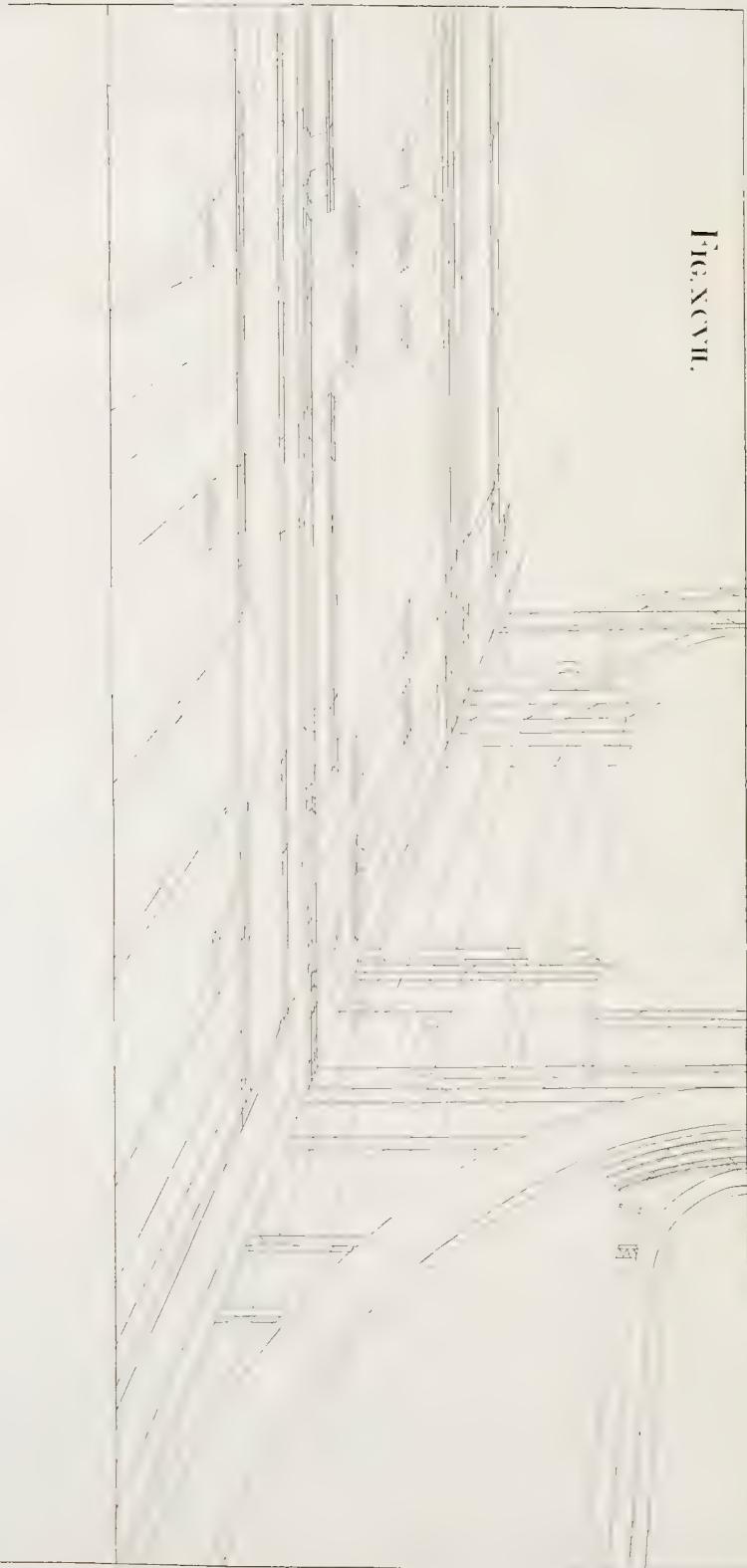


Figura Nonages. septima.

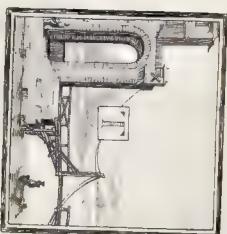
Ninety-seventh Figure.

Alia preparatio ad figuras nonagesimam-octavam & nonagesimamnonam.



T optica projectio vestigii & elevations quartæ partis totius Operis distinctior evadet, mensuras partium singularium quadruplicavi, eandemque methodum in hac delineatione tenui, quæ figuris octogesimæ sextâ, octogesimâ, octogesimâ octavâ, & octogesimâ nonâ, explicata fuit. Punctum oculi positum est in medio navis Ecclesie; punctum distantie est in linea ex qua incipit arcus testudinis.

Another Preparation to the Ninety-eighth and Ninety-ninth Figures.



HAT the Perspective of the fourth part of the Plan and Elevation of this Work might be more distinct, I have in this Figure made the Measures of each part four times as big as in the former ; and have kept the same Method in this Delination, as was deliver'd in the Eighty-sixth, Eighty-seventh, Eighty-eighth, and Eighty-ninth Figures foregoing. I have set the Point of Sight in the midst of the Nave of the Church ; and the Point of Distance is in the Line from which the Arch of the Vault springs.

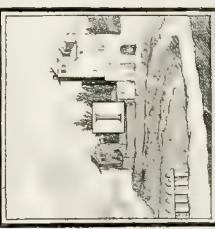
Figura Nonagesim octava.

Quadrans Architectura horizontalis in formâ, cum luminibus & umbris.

Ninety-eighth Figure.

A fourth Part of the Architectonical Design,
painted on the Vault of S. Ignatius Church;
with its Lights and Shadows.

ABES in hac pagini qua-
drantem totius Operis, modo
confucto erutum ex praec-
denti: minirum, cuiuside cir-
cini ex angulis vestigii acci-
pientur lineæ perpendiculari-
res; ex angulis vero elevatiōnēs desinuntur li-
neæ parallelae, ac lineæ visuales ad punctum o-
culi.



In this Figure you have a Quarter of the whole Work, drawn from the foregoing Figure, after the usual Manner; namely, by taking with the Compascs the perpendicular Lines from the Angles of the Plan; and the parallel Lines from those of the Elevation, as also the visual Lines to the Point of Sight.

FIG. XCVIII.

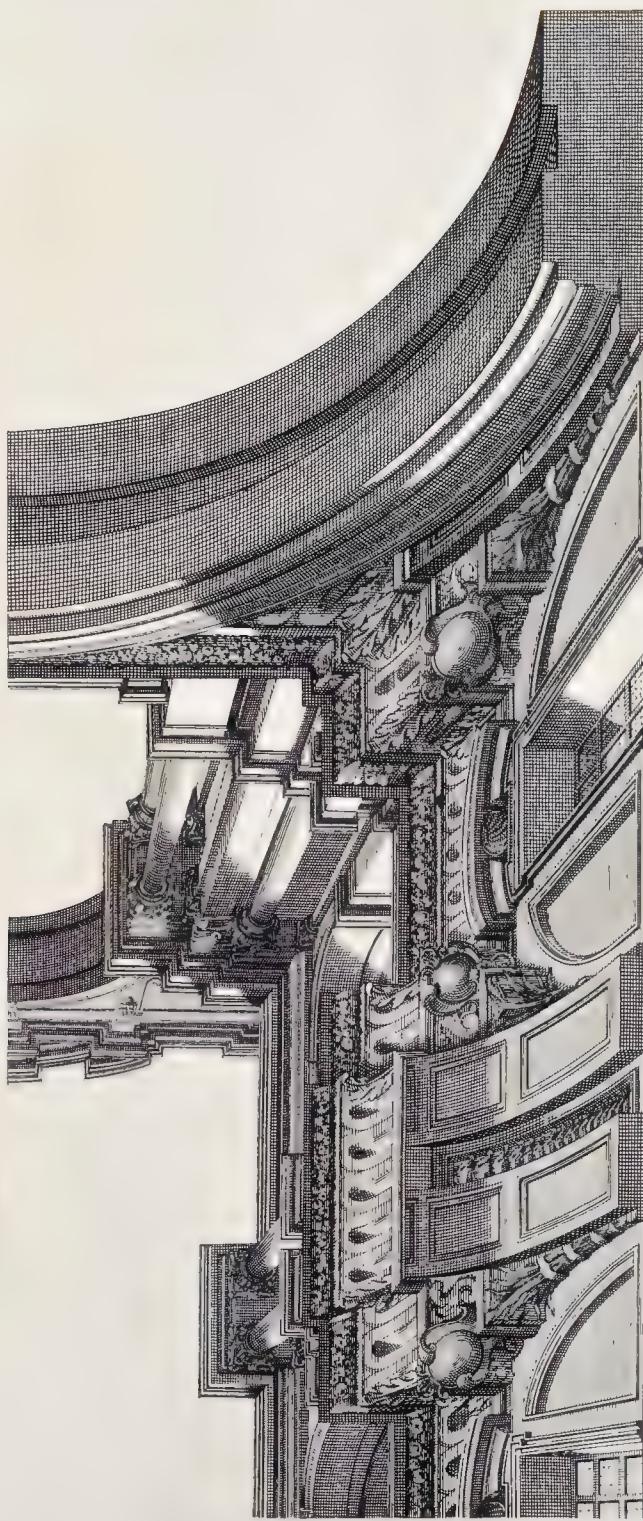






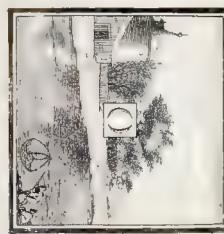
FIG. XCIX.



Figura Nonagesima nona.

The Ninety-ninth Figure.

Alter quadrans totius Operis.



B diversitatem diuinum quadrantum, tum in longitudine, tum in luminibus & umbris, seorsim apponendum utrumque censui; ut in eis delineandi omnem difficultatem tibi adi-
merem.

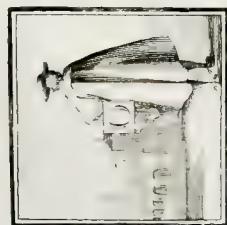
Another Quarter of the whole Design.



Y reason of the Difference of the two Quarters, as well in Length, as in their Lights and Shadows, I resolved to describe them separately, that you might find no Difficulty in designing the whole Work.

FIGURA A Centesima.

Modus reticulationis facienda in testudinibus.



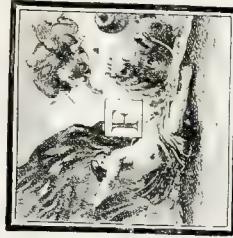
PER A que sunt in planis, contenta sunt dupli reticulatione, ut motum est. Nam una carna fr. in exemplari, altera fr. in superficie in qua ipsum Opus pingendum est. At vero reticulus exigit tres reticulationes. Prima fit in exemplari, quid superponimus dilatandum est; justa regulariter. Perfracte horizontalis. Secunda reticulatio confitat ex formulis, c. et penitulis; cuius formam geometram habet in M. Locum ubi legendi sunt clavis qui diligenter huiusculas, expositae retile AB, EF: opus vero deformantis retis est in N. Partim enim est O, tempore nocturno, lumen candele aut lucerne exire in O, atque a reti ex funiculis projecti linea umbra in tuffinum, ex dirigue line penicillo coloratur, habetur tertia reticulatio ad pingendum reticulum. Et cetera.

Dixi si imaginem, quia in reticulatione tabulato, ac remoto a reti, & multo maiori a lumine, vel prouti inequant umbre, vel inquadrati circule ac dilatatae, ut operet. Itaque ubi initia facit diffinita, fixes in O extremitatem filii; queaque ad refundendum extende, uteris orbi radio ac lumine canicula, ad notandum umbras lecam. Prederit etiam, ut super tabulato motum filii oscendas lumine aletius canicula, quod spin filio proxime adhuc sit. Atque his aliisque adminculis, tuigae industris, colores mutantes (per limitis sanguinis, ac territorum reticulationis) asperges. Postquam rete ex filis fixi in partibus dilatatae coruscant, puto in G H, unde incipit basis adhuc: tunc autem umbra in forme sunt magis dividitur ac sufficiens.

Diligentissime curatis, ne menyare exemplaris discrepant illatenus & mensuras reficiantur: exinde refundantur reti exemplaris, ut recte incident in angulos, arcus, aut lumina refundantur. Denun si in vita quis emendari nequeat, incidere nolis i. ferre, regalis omnis Perspectiva & horizontalis, queque in hominibus aut animalibus, ac in columnis aut cornicibus pingendus, omnino feruntur eponere.

The Hundredth Figure.

The Method of drawing the Net or Lattice-Work on Vaults.

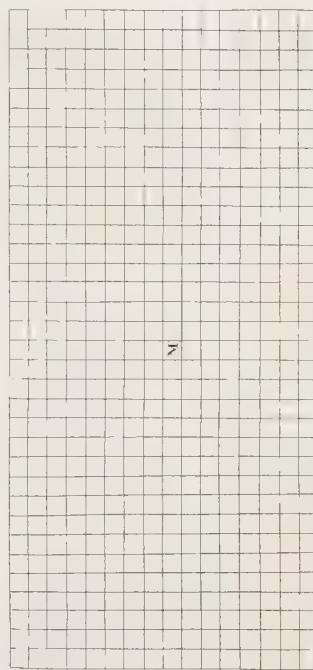
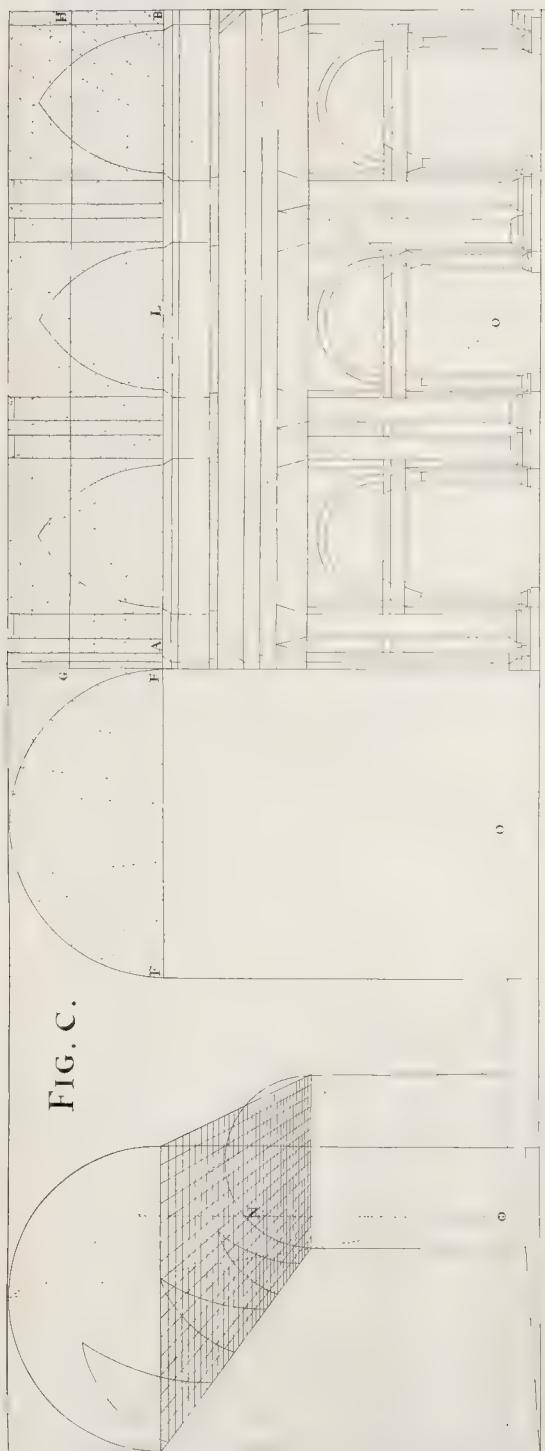


OR Works on a flat Superficies, two Networks are sufficient; as has been already intimated: One drawn on the Copy; the other on the Table to be painted. But for arch'd Surfaces, or Vaults, three are required: One made on the Copy, which I suppose drawn according to Rules of horizontal Perspective. The second consists of a Frame of small Cords or Threads, to be hung up; the Geometrical form of which is M. The Lines A B, E F, shew the Place where this Frame is to be fixt, in the same manner as the Perspective N. The Point of Sight is O, or of Distance, L O. Therefore, if you imagine a Lamp or Candle fix'd in the Night-time at the Point O; the Shadows of the Thread, thrown thereby on the Vault, being traced by a Pencil, make the third Network required for painting the same.

I say, if you imagine a Lamp thus fix'd: because either the Scaffold to the Vault, or the great Distance of the Vault from the Net-work, or the greater of both from the Light, may prevent the Shadows from being thrown at all, or at least, may render them so faint, as not to be distinct enough for the purpose. Therefore, where this happens, instead of the Light fix one End of a Thread in the Point O; and extending the other to the Vault, make use of it as a Ray from the Lamp or Candle, for defining the Place of the Shadows. It will be also of great use, to extend the Motion of the Thread with the Light of a Candle you may have by you on the Scaffold, holding the same near the Thread itself. By this, and other such Helps, which your own Industry will suggest, the You may lay the Shadows in Colours, and complete the third Network required. The Frame of Threads may also be fix'd nearer the Vault, at some Distance above the Cornice, as at G H, where the painted Architecture begins; for the Shadows thrown on the Arch will by that means become more visible and distinct.

You must be very careful, that the Measures of your Copy are exactly the same with those of the Vault, that the Net-work thrown into the Angles, Arches and Lunettes of the Vault, may perfectly correspond with that of your Copy. Lastly, if you would not run into inextricable Errors; strive yourself, that all these Rules of horizontal Perspective are as strictly to be observed in the Figures of Men or Animals, as in Painting Columns, Cornices, or the like.

FIG. C.





Ut Perspectivæ Tyronibus consulerem, qui fortasse non adeo facile percipient duodecim primas figurarum explicaciones, totidem novas explicaciones hic addo.

For the greater Help to Beginners, and those who are less conversant in the Art of Perspective, I here subjoin a farther Explanation of the first twelve Figures of this Book.

FIGURA PRIMA.

Explicatio linearum plani, & horizontis, punctorum oculi, & distantie; de hoc ultimo pressius.

TRES lineæ diversæ inter se nominis, & numeris, item, & duo puncta precipiū necessaria sunt, ut delineatio quælibet opicè reddi queat: prima vocatur linea plani, secunda horizontalis ubi est punctum oculi; de tercia loquar in elevationib; alterum dubium puncti affigatur oculo, & vulgo dicuntur punctum oculi; alterum vero affigatur distantia, à qua nomen habet. Punctum oculi notissimum est, punctum vero distantie non ita; in hujus igitur explicacione morabor, & ut clarissima ostendam quid sit, & quomodo formandum sit, scelere descriptionem Ecclesie geometricæ habitan, quam in tres partes divisæ, in vestigio, sectionem, & interiorem faciem, in qua facie vestis quis pingere, seu delineare aliquid opicè, ut elongetur ad menjuram aperturæ quadrati P, us habens in vestigio, & ad menjuram profunditatis Q, quam habet in sectione.

Super faciem CCCC quam puta esse delineamentum, habes rationem, quia debes disponere supradicta puncta, & lineas. HI erit linea plani: NON erit linea horizontalis, qua fieri solet distantia à linea plani altitudine homini, sed in B. Punctum oculi erit in O; punctum distantie erit in N, ex qua parte matureris. Hoc punctum N debet tantum absesse à punto O, quantum tuo arbitriatu tu sis prout esse ut videtas profunditatem illius quadrati PQ, sicut vides in exemplo vestigii, & sectionis; ubi rem velut in suo statu naturali exhibeo: in illis enim tunc absit N ab O, quam absit homo ab A ad DE, & bona B in sectione, ab EG, ubi est murus in quo pingendum, vel lineandum est.

Sed ulterius curiosè descriptionem banc considereres, videbis quam bene responderet quadratum P in plano, & elevatio Q, ut naturalis status rei in sectione Perspectiva posite in facie CCCC, quæ est delineatio. Videbis enim visuelas, que secant in plano spatium RS, ita pariter secare spatium TV in elevatione: & segmentum visualem XZ in sectione respondere YK in elevatione, quæ demonstratione non careret.

FIGURA SECUNDA.

Quadratum optice delineatum.

POSTQUAM descriperū in papiro separata quadratum geometricum A, facies duas lineas parallelas inter se distantes altitudine, quam dederis puncto oculi; linea inferior erit linea plani, linea superior erit linea horizontalis, super quam ponuntur puncta oculi O, & distantie E, quod sit ex parte quam maturi: linea distantie non debet esse brevior magnitudine rerum describendarum. Transfer posita circino latitudinem quadrati A in CB, unde cum visuibus ad punctum O; & similiter transfer longitudinem ipsius quadrati in DC, duensi lineam à punto D ad punctum distantie E, transuenientem per visualem CO, & ubi illa fecat, habebis terminum quadrati optici GFCB, duensi parallelam ad lineam plani in F.

Et autem hoc idem citius absolverem, sepius chartam complicavi, ut habes in A.

FIRST FIGURE.

An Explanation of the Lines of the Plan and Horizon, and of the Points of Sight and Distance; but more especially of this last.

FOR beginning any Design in Perspective, there are principally required three Lines, and two Points: One Line where the Feet stand, which is call'd the Line of the Plan, or Ground-line: The second where the Eye is plac'd, call'd the horizontal Line: I shall speak of the third in the Elevations. Of the Points, one is affig'd to the Eye, the other to the Distance. The first of these is generally known, the latter not so well understood, though of great Use for giving the Removal or Depth of every Object. I shall therefore infit a while on the Explanation of the Point of Distance; and that I may more clearly shew what it is, I have chosen the Geometrical Description of a Church, which is divided into three Parts; viz. the Plan, Profile, and inner Face, in the mid of which Face one would paint a Piece of Perspective, that should seem to recede as much as the Square P in the Plan, and the Depth Q in the Profile.

On the Face CCCC, which suppose that of the Design, you see the Manner of disposing the two Lines and the two Points. HI is the Ground-line, NON is the horizontal Line, which is usually made a Man's Height above the Ground-line, as in B. The Point of Sight is O, the Point of Distance N, on which side you will. This Point N must be as far from O, as the Distance you determine to place yourself ac for viewing the Depth of the Square PQ; as is exemplify'd in the Plan and Profile, where you see the thing as in its natural Position: And in them N is distant from O, as far as the Man in A is remov'd from DE; or the Man B in the Profile from FG, which is the Wall to be drawn or painted on.

If you farther and more strictly examine this Description, you'll discern how well the Square of the Plan P, and the Elevation Q, correspond as if naturally put into Perspective on the Face CCCC, which is the Draught. For you see th' Vitruvii which cut the Space RN in the Plan, cut the same Space TV in the Upright; and the Segment of the Vitruvii XZ in the Profile, anther that of YK in the Elevation; which needs no Demonstration.

SECOND FIGURE.

A Square in Perspective.

AFTER you have drawn, on a separate Paper, the Geometrical Square A, make two parallel Lines as much distant one from the other, as you would have the Height of the Eye. The under Line is the Plan or Ground-line; the upper Line is that of the Horizon, on which are plac'd the Points of Sight O, and of Distance E, on which side you please. The Line of Distance should not be shorter than the extent of the thing to be describ'd in Perspective. Then with your Compasses set for the Breadth of the Square A on CB, and draw Vitruvii to the Point O; and from the Length of the Square transfer'd into DC, draw a Line from the Point D to the Distance E; and where that cuts the Vitruvial CO, by drawing a Line parallel to GF, you describe the Square in Perspective GFCB.

For the more quick Dispatch of this, I commonly told the Paper, as you see in A,

FIGURA TERTIA.

Rectangulus altera parte oblongior optice.

QUIDQUID in proximo quadrato vidisti, facies in presenti, transferres latitudinem BC in BC, & longitudinem in CD, dicens latitudinem BC ad punctum oculi O, & longitudinem CD ad punctum distantie E, ubi vero hoc linea fecit visus lem CO, erit terminus rectanguli supradicti FG, BC, dicens paralleliam, ut supra.

FIGURA QUARTA.

Quadratum duplex optice.

EODEM modo construes quadratum duplex A, transferens circino, aut duplocto charlam, latitudinem cuiuscumque lineas, ut vides per numeris 1, 2, 3, 4, 5, 6, super lineam plani in istud numeris, & ab ipsis transversas ejus ad punctum O. Postea transfer longitudinem 7, 8, 9, 10, super lineam plani in istud pariter numeris, & ab ipsis duabus lineis ad punctum distantie E. Vbi haec linea fecerit lineam 6, 7, 8, sunt linee parallelae ad lineam plani, & quadratum conficitur; parum constructionem facies de quadrato secundo, & tertio, facile ex dictis.

FIGURA QUINTA.

Quadratorum vestigia cum elevationibus.

FIGURAM hanc in duas partes dividit; in superiori parte ridentes tria quadrata optica aliquantulum adumbrata, eaque tam inter se distantia, quinta est distributio super lineam plani. BC erit quadratum primum, secundum erit in EF. Si ergo pulsueris longitudinem quadrati in BC, eamque duxeris ad distantiam, facius in DD' visuslem AO. Si pariter pulsueris alterum spatium longitudinis ejusdem quadrati in EF, & duxeris ad lineam distantie, habebis secundum quadratum optice. Idem facies de tertio, & de aliis, que distribuenda sunt.

In secunda parte. Si desideres supra eisdem vestigia formare elevationes cuborum, & stylabariorum, ut in inferiori figura parte vides, satis erit ex omnibus vestigiorum angulo elevere lineas occultas, & apparentes, determinando altitudinem faciei L primo cubo, & anguli ejusdem facies dabunt altitudinem omnium aliorum.

Immò etiam totidem cubos formare potes sine lineis occultis, ducent solidum apparetum, ut vides in tribus expeditis adumbratis, & nescidis, quomodo habes perpendiculariter sumuntur ab angulis vestigiorum, ut in superiori figura translati sunt ab angulis elevationis, ut videtur i. l.

FIGURA SEXTA.

Modus delineandi optice sine lineis occultis.

DESIDERANS faciliter figuram hanc exponere, dabo rationem elevandi corpora sine lineis occultis, ut in superiori tetrigi; & ostendam igitur hic, quoniam quinque cubi adumbrati defunctorum ab eorum vestigii, & elevationibus.

Das debes facere preparationes, si libeat, in chartis etiam separatis. Prima erit formare geometrici vestigium, & elevationem, ut vides in B & A. Secunda erit distribuire super lineam plani latitudinem vestigii B, puta in NM, & in duabus proximis: illius longitudine MX ducta ad distantiam D, fecit visuslem MO in R. Spatium autem obliquissimum E utile etiam est aliis duobus quadratis postea eandem lineam plani; anguli quorum translati ad distantiam B, eisdem angulis dabunt inter visusles NO, MO. Hoc posito, duces perpendiculariter ad angulum N, que in elevationibus geometricis semper necessaria est, eaque tercia linea est, quam supra dixi. Transfer postea altitudinem A in NF, cum visuslem FO, NO, & inversae altitudinem ST. Hoc pariter de ceteris eveniet.

Sciendum superest quoniam modo supra dicta preparatione uti possit ad construendos stylabatas adumbratos, & inornatos.

Super aliam igitur chartam disponitum cum duabus lineis, plani scilicet, & horizonti, una cum puncto oculi O, & perpendiculari V, ejusdem measure cum supra dicta preparatione, & faciens uti me fecisti vides. Experiens postea circino NF, cuius est 1, 5, & 2, 6. Metue pariter ST, & inversae equaliter 7 & 3, facies postea lineas planas, & visusales ad punctum oculi, & habebis planum superius cubi in 1, 2, 3, 4. Hoc idem facientur est de aliis. Una verbo: anguli vestigiorum dabunt tibi lineas perpendicularares, & anguli elevationis dabunt lineas planas; eaque haec semper erit.

THIRD FIGURE.

An Oblong Square in Perspective.

WHAT was done in the preceding, repeat in this Third Figure. Transfer the Breadth BC into BC, and the Length into CD, drawing the Breadth BC to the Point of Sight O, and the Length CD to the Point of Distance E. Where this cuts the Visual CO, you terminate the Square FG, BC, by drawing the Parallel, as before.

FOURTH FIGURE.

A double Square in Perspective.

THE double Square A is made after the same manner as the former, by transporting, either with the Compasses, or folded Paper, the Breadth of every Line, as you see the Points 1, 2, 3, 4, 5, 6, on the Ground-line mark'd with the same Numbers; and from these draw Visuals to the Point of Sight. Then transfer the Points of Length 7, 8, 9, 10, into the Ground-line, as you see also in the same Numbers; and direct their Lines to the Point of Distance E. Where these interlace the Visuals 6, 7, O, make Parallels to the Ground-line, and the Square is complete. The same is done in describing the middle Square, and that on the other Side.

FIFTH FIGURE.

Several Plans of Squares, with their Elevations.

IHAVE divided this Figure into two Parts; In the uppermost you have three Squares in Perspective a little shadow'd, distant one from another, according to their Distribution on the Ground-line. BC is the first Square; EF the second. If you then set the Length of a Square on BC, and draw Lines to the Point of Distance, they will intersect the Visual AO in DD'. In like manner, if you set another Length of the said Square on EF, and draw to the Point of Distance, you'll have the second Square in Perspective. The same you may do in the third, and as many as you have occasion for.

In the second Part you see, that if upon the fore-mention'd Plans the Elevations of Cubes or Pedestals were requir'd, it would suffice to elevate the occult and visible Lines from every Angle of the Plan; and determining the Height of the Face L of the first Cube, the Angles of that Face drawn to the Point of Sight, give the Height of all the others.

You may form the same Cubes without occult Lines, drawing only those that are apparent, as you see in the three Cubes that are finish'd and shadow'd; the Perpendiculars of which are taken with the Compasses from the Angles of the Plan, as is shewn in HI of the upper Figure; and the level Lines are transfer'd from the Angles of the Elevation, as in FG of the same Figure.

SIXTH FIGURE.

The Manner of designing in Perspective without occult Lines.

BEING desirous to make this Rule as easy as possible, I shall give a farther Account of raising Solids without the Help of occult Lines, which I only touch'd upon in the foregoing Figure. I therefore here shew you, how the five shadow'd Cubes of this Figure are taken from their Plans and Elevations.

Two things preparatory are to be done, and, if you please, on separate Papers. The first is, to describe the Geometrical Plan and Elevation, as you see in B and A. The second is, to dispose on the Ground-line the Breadth of the Plan B; as for Example, in NM, and the two next to it. The Length thereof MX, drawn to the Point of Distance D, cuts the Visual MO in R; and the Foreshortening E lies also for the other two Squares placed upon the same Ground-line, whose Angles being directed to the Distance D, give as many Angles on the Visuals NO, MO. This done, erect a Perpendicular on the Angle N, which in Geometrical Elevations is always necessary, and is the third Line mention'd in the first Figure. Then carry the Height A on NF, drawing the Visuals FO, NO, which determine the Height ST, and that of the other Squares.

It remains to be known, how to make use of the foreaid Preparation for the Construction of the shadow'd Pedestals.

On another Paper therefore dispose the Horizontal and Ground-lines, together with the Point of Sight O, and the Perpendicular V, keeping the same Measures as in the aforesaid Preparation, and doing as I have done. You may prove by the Compasses, that NF is equal to 1, 5, and 2, 6, and measuring ST, you'll find it equal to 7, 3, then drawing the level Lines, and the Visuals to the Point of Sight, you have the upper Face of the Cube C in 1, 2, 3, 4. The same must be done in the others. In a word, the Angles of the Plan give you the perpendicular Lines, and the Angles of the Elevation give the level Lines, or those parallel to the Ground-line; and this you are always to understand for the future.

FIGURA SEPTIMA.

Aliud exemplum construendi vestigium geometricum, cum elevatione longitudinis.

VIDES hic stylabatam P in quatuor partes divisum, & adumbratum. Si illum optice delineare volsis, confruere debet supradictas preparationes, geometricam nampc, & opticam. Nominis geometricae inteligo vestigium A, & elevationem B; nomine vero optice, rotum id quod includitur in GCDEO.

Transfer igitur latitudinem geometricam CD vestigii A super lineam planariter, & transfer longitudinem DE super lineam planariter DE, operari more solito; & habebis vestigium opticum. Transfer profectum elevatum HX in CG perpendiculari; ducens visualem GO, eleva ad lineam GO omnem angulum, quem planum facit in linea CO, & habebis altitudinem necessariam etiam sectionis.

Transfers denique circino in aliam chartam angulos vestigii, qui dabunt tibi lineas perpendicularares, & anguli sectionis dabunt lineas planas: Visualem vero ducas ad punctum oculi.

FIGURA OCTAVA.

Stylobata optica.

HIC etiam postquam feceris supradictas preparationes, geometricam scilicet, & opticam; facies praesentem stylobatam adumbratum, transferenti circino angulari vestigii, ut confinxas perpendicularares; & angulos sectionis, ut formes lineas planas, ut supra. Nam sic duo anguli vestigii MO dabunt lineas perpendicularares EF; angulus vestigii R, dabit perpendicularares PI. & sic reliqui anguli dabunt reliquias lineas perpendicularares. Similiter a sectione angulus I dabit lineas planas HN. Breviser, primus terminus sectionis ID dabit altitudinem linearum planarum in facie stylabata adumbrata E FHN. Secundus terminus Q, dabit altitudinem facies opposita, & occultae P.

Duo tamen modo; primum, ut faciens vestigia geometrica, ducas ad elevatione A totidem lineas ad latera vestigii B, quo angulis inornies in prominentia (upradicta) elevationis B, ut manifeste vides in linea quis ex puncto compofuit, illa enim a stylabata. A cadent super vestigium B; quare prominentia major in elevatione L facit lineam maiorem L in vestigio.

Scundum quod moneo sit, ut volens elongare vestigium opticum delineatum MOR à linea plani K, quantum erit spatium C in eadem linea plani, tandem elongabitur spatium G à linea ejusdem plani.

FIGURA NONA.

Optica delineatio Architecturæ Jacobi Barozzii: & pri-
mum, de stylobata Ordinis Etruici.

QUANDOQUE IDEM omnius nota est. Ad istud architecturæ Barozzii, em-
bit penitus immutatum cum suis regulis particularibus, & genera-
libus exponit. Metris autem illam modulū usi fieri solet; qui igi-
tur illam defiderat, in sequentib[us] figuris inventire totam, simulque
discet optice redire. Cum autem non minus Optice studiō quam Architecturæ
necesse sit, efficerē delineationē rei conſtrūendae, ab hoc verè, ab illo fitto,
id est, cum utergo facere debet vestigium, elevationem, sectionem, & faciem,
ob id delineari hic stylabatam Ordinis Etrusci cum suo vestigio, quem vides in
AB, ut faciliter percipias quid in proxima figura dixi, & totidem faciliter an-
gulos prominentiarum elevationis, totidem ducentas eft lineas super lineam ve-
stigii; cum hoc necesse sit ad invicendum illorum angularium, cum suis lineis
concursum in suis degradationibus. Nota, longitudinem, quam E dicitur
in G esse illam, à qua non solum nascitur vestigii obliquitas, verum etiam ab
illa nascitur obliquitas illius quam vocetur sectionem E. Ob id in altero bujus e-
jusdem figure stylabata totum id è contrario videtur.

Non amplius repetam quoniam modo eruarat nuda delineatio, de qua superius plures; dicam tamen angulos primi termini sectionis E daturos lineas planas facies D, & angulos vestigii daturos omnes perpendicularares.

FIGURA DECIMA.

Stylobata Doricus, & ratio vitandi difficultatem quam-
dam, quæ occurrit inter illum optice delineandum.

HIC oritur difficultas hoc. Vestigium A optice translatum in C ade-
contrahitur, ut diffinitè vides neque nisi collocetur circini per-
tus transferri possint perpendicularares stylabata adumbrantes; & torque-
bus difficultas oritur à propinquitate quam habet linea horizontalis, seu pun-
ctum oculi cum linea plani. Ut igitur illum vincas: Duces lineam plani in-

SEVENTH FIGURE.

Another Example of a Geometrical Plan, with the Elevation of its Length.

If you would delineate in Perspective the Pedestal P, which you here see divided into four Parts, and shadow'd; you must make the two foregoing Preparations; namely, the Geometrical and the Perspective. By the Geometrical, I mean the Plan A, and the Elevation B; By the Perspective, all that's contain'd within G, C, D, E, O.

Then transfer the Geometrical Breadth CD of the Plan A, into CD of the Ground-line; and the Length DE of the said Plan into DE of the Ground-line working after the usual manner; and you will have the Plan in Perspective. Again, set the Elevation HX on CG of the Perpendicular, and drawing the Visual GO, elevate thereto every Angle made by the Plan on the Line CO, and you have all the Heights necessary for the Profile.

Last, by the Compasses you transport on a clean Paper the Angles of the Plan, which give the perpendicular Lines; and thence of the Profile, which give the level Lines. The Visuals you draw to the Point of Sight.

EIGHTH FIGURE.

A Pedestal in Perspective.

HEREG also, after you have made the two foregoing Preparations, the Geometrical and the Perspective; this shadow'd Pedestal is made by taking with the Compasses the Angles of the Plan, for drawing the Perpendiculars, and the Angles of the Profile for the level Lines, as before. Thus the two Angles of the Plan MO, give the perpendicular Lines EF. The Angle of the Plan R, gives the Perpendicular P; and the other Angles give their respective Perpendiculars. So likewise in the Profile, the Angle I gives the level Line HN. In short, the first Outline of the Profile ID gives the Height of the level Lines on the Front of the shadow'd Pedestal. The other Out-line Q gives the Height of the occult and back parts thereof.

Nevertheless, two things are to be observ'd; first, that in making the Geometrical Plan, you draw from the Elevation A, as many Lines to the Side of the Plan B, as you have Angles in the Projections of the said Elevation; as is manifest in the pointed Lines, which fall, from the Upright A, on the Plan B, where that of the greatest Projection L in the Elevation makes the outer Line L of the Plan.

The second thing to be observ'd, is, That if you would have the Perspective-Plan MOR as far within the Ground-line K, as the Breadth of the Space C on the same Line, the Space G will then be the Distance thereof from the said Ground-line.

NINTH FIGURE.

The Architecture of Vignola put in Perspective; and first, the Pedestal of the Tuscan Order.

SINCE every one is acquainted with Vignola's Architecture, I determine not to alter it, but to explain it, with its general and particular Rules; measuring the same with Modules, after the usual manner. He therefore that has it not, may find it in the following Figures, and at the same time learn the Method of putting it in Perspective. And whereas the Drawing the Plan, Elevation and Profile of what's to be built, is no less necessary for him that studies Perspective, than for the Architect; the first performing in Appearance, what the latter does in Reality; I have therefore here delineated the Tuscan Pedestal, with its Plan, as you see in AB, that you may the better apprehend what I aid in the foregoing Figure. That from all the Angles of Projection in the Elevation, Lines must be let fall on the Plan; this being of absolute necessity for finding the Correspondence of the Angles with the Lines in the Perspective Projection. Observe, that what I always call Length, as from F to G, is that from which proceeds not only the Foreshortning of the Plan; but also that which I call the Profile E. Wherefore, in the opposite Pedestal of the same Figure, you'll see a contrary Dilatation of the Whole.

I shall not here repeat, how the finitū Pedestal is taken from these; having so largely spoken of that before; but briefly tell you, that the Angles of the first Out-line of the Profile E give the level Lines of the Face D, and the Angles of the Plan give all the Perpendiculars.

TENTH FIGURE.

A Dorick Pedestal, with the Manner of shunning a Difficulty, which occurs in putting the same in Perspective.

In this Figure a Difficulty arises, which is this; That the Plan A put in Perspective in C, is to be forehortned, that one can't see distinctly, where to place the Compasses, for transferring the Perpendiculars on the shadow'd Pedestal; which is caus'd by the too near Approach of the horizontal Line to the Ground-line. For avoiding this Difficultus,

... illis quantum libuerit, & super illam serē densū latitudinem, & longitudinem more solito, retinendo puncta oculi, & distanciam OF, & sic videlicet vestigia magis minus distincta; Vestigium enim E distinctius est vestigio D, & D distinctius est vestigio C.

FIGURA UNDECIMA.

Stylobata Ionicus, & ratio vitandi aliam difficultatem in elevationibus.

IN elevationibus etiam sectio optice posset accidere, ut si visualis LK nimis recta sit, sectio B restringatur. Elongando lineam plani ab L ad M, visualis MN erit inclinatio, & conseqüenter sectio C erit latoe, & distinctior.

Nota, difficultatem hanc saepius te habitum in figuris praecepit, quae multas lineas habent, ut in figura quadraginta secunda, ubi pariter rationem vitandi confundonera reddam.

Neque tibi molestiae sim, quod in hac figura lineam horizontalē infra lineam plani collocaverim, id enim feci, ut illarum diversis effectibus videbas, ut tu in tuis studiis mutes, & difcas.

FIGURA DUODECIMA.

Stylobata Corinthius cum suis pilis.

FECISSE septimanū figuram magno tibi documento erit ad construendū, & dividendum stylobatam A, & vestigium B; cum nūbil addere debat præter pilas C cum cornicē, qui duo latera ambī. Optice hoc vestigium delineabū in D, que delineatio distinctior est, quia inferius duxi lineam plani; & distinctior etiam est sectio E, cum elongauerim visualēm FG. Sic semper agam, ut detur locus figure adumbratae, & ut etiam video perpendicularēs stylobatae adumbrati cadere super angulos vestigii, & lineas planas incideat ē diametro super angulos sectōnis E. Iterum libenter moneo, ut facias supradictas preparationes in chartulis separatis, ut initio effugias transversā figuris nitidis circino; facile enim tibi posse eris integras machinas Perceptivā suendioris delineare, ut videbis: in hoc enim tota regule būiūce, & totius operis facilitas sit eſt.

draw another Ground-line as much below the first as you please, and carry the Breadth and Length thereon, after the usual manner, still keeping the same Points of Sight and Distance O and F: And, according to the Removal of the Ground-line, the Plans will be more or less distinct; as you see the Plan E is more distinct than D, and D is more so than C.

ELEVENTH FIGURE.

The Ionick Pedestal, and the Way to shun another Difficulty in the Elevations.

IN Elevations of the Profile in Perspective, it may sometimes happen, that the Visual LK may be so direct, as to render the Profile B too close and narrow; wherefore prolonging the Ground-line from L to M, make the Visual MN, which being much more oblique, does consequently render the Profile C more broad and distinct.

And observe, that this Difficulty will very often occur; especially in Figures that have many Lines, as the Forty-second Figure has, where I speak also of the manner of avoiding the same.

Nor let it trouble you, that in this Figure I have plac'd the horizontal Line below the Ground-line; which I have done, that you might see their different Effects, and by changing the Disposition of your Designs, improve and learn.

TWELFTH FIGURE.

A Corinthian Pedestal, with its Pilasters.

THE Performance of the Seventh Figure will be a great Assistance to you, in the Construction and Division of this Pedestal A, and the Plan B; since you have nothing more to add here, but the Pilasters C, and the Mouldings which surround the two Sides. This Plan is put in Perspective in D, and becomes more distinct by my sinking the Ground-line lower; and the Profile E is also more distinct by the Removal of the Visual FG, as mention'd in the foregoing Chapter. This I shall always do, that there may remain Room for the shadow'd Figure, and that you may also see that the Perpendiculars of the shaded Pedestal fall directly upon the Angles of the Plan, and that the level Lines directly answ'er the Angles of the Profile E. I repeat my Advice, that you would make the foreaid Preparations on several Papers, and accustom yourself at the beginning to take off the finish'd Figures with the Compases; for it will become very easy to you afterward, to design entire Machines of delightful Perspectives, as you'll see hereafter. And indeed in this Practice, the Facility of this Rule, and of all that follows in this Work, does chiefly consist.

IN-

Respondeatur objectioni faciae circa punctum oculi opticum.

Non omnium sensus est, uni optico operi unicum tantum punctum assignare, e.g. toti spatio fornici, tholi, & tribuna, quam vocant, expressæ in figura nonagesimateria, nolunt concedi unicum punctum, volunt concedi plura.



ESPONDEO, objectionem hanc duplíciter intelligi posse: vel enim intelligi posset, non esse assignandum unicūm punctū toti illi spatio; atque in hoc sensu vera est; cum enim spatiū illud valde oblongū sit, dividit debet in partes, atque assignanda tribune, quam dicunt, tholū, & fornici, propria puncta; cum hoc communiter doceant, ubi situs nimis est longus, & parum altus. Vel potest intelligi de qualibet ex dictis paribus, & sic intellectu penitus falsa est. Primo, quia præstantiores fornices aularum, & templorum, qui optico artificio ornata sunt, si unicūm opus reddunt, & sūmet autoribus determinatum idemque unicūm punctum accepisse comportum est. Secundo, quia cum ars optica sit mera veri fictio, non id pector facere potest, ut à qualibet parte simulat veritatem, verū ab uno determinato puncto id ostendat. Tertio, quia si, e.g. fornici, qui una integrō optico operi ornaretur, plura puncta assignaveris, nullum repertis locum, unde integrum opus spectare possis, & ad summum ex quolibet puncto tantum partem illius spectabis, nūquam vero totum opus. Ex dictis igitur rationibus concludo ab inducētus plurā puncta in eadem operi induci malum magis eo, quod unicūm punctum inducit; quare hoc omnino necessarium est nos in quo unicūm opus formandum sit, ad quod collimare debeant ex omni operi parte figura simul & architectura. Quo posito, negari rationabiliter nequit, à me etiam concedi unicūm punctum spectando fornici amplio, aptoque ad representandum unicūm ejus, qualis est fornix in D. Ignatii templo. Si vero propter situm irregularum, ut dictum, architectura extra punctum aliquantulum deformetur, & figura pariter operi optico intermixta extra commune punctum aliqualem patientur deformitatem, prout quod quod à supradictis rationibus excusat, nequaquam id vitio arti est, sed laudi; quandoquidem ars à suo puncto exhibet, proportione positā, ut rectum, ut planum, ut concavum, id quod tale non est.

An Answer to the Objection made about the Point of Sight in Perspective.

Every one does not approve, that in a Perspective of great Extent one Point of Sight only shold be assign'd the whole Work; as for Example, In the whole Length of the Nave, Cupola, and Tribune, express'd in the Ninety-third Figure, they will by no means allow of one single Point, but insist upon several.



ANSWER, This Objection may be understood two ways: either that one Point alone is not sufficient for that whole Length, and in this sens'e 'tis true; for that Space being very long, it ought to be divided into Parts, and proper Points assign'd to the Tribune, Cupola, and Vault of the Nave; as is commonly taught, where the Situation is of a great Length, and not very high. Or it may be understood of any One of the said Parts, and so is altogether false. First, Because in the Vaults of Halls or Churches painted by the greatest Masters, if they consist of one Piece only, we find but one Point of Sight assign'd. Secondly, Since Perspective is but a Counterfeiting of the Truth, the Painter is not oblig'd to make it appear real when seen from Any part, but from One determinate Point only. Thirdly, Because, if in a Vault, for Example, where you would paint one entire Design of Architecture and Figures, you assign several Points of Sight, you will find no place whence you may take a perfect View of the Whole, and at best you can only view each Part from its proper Point. From all which Reasons I conclude, that the Introduction of many Points into the same Piece, is more injurious to the Work, than making use of one only: Wherefore 'tis absolutely necessary in a regular Situation, and where the Work is all of a piece, so to place the same, as that the Figures and Architecture may from every part of the Design have respect thereto. This suppos'd, I confess that I myself make use of one Point of Sight only, in very large Vaults that consist of one Design, such as that of the Nave of the Church of S. Ignatius. If therefore through the Irregularity of the Place, the Architecture appear with some Deformity, and the Figures intermix'd therewith seem any thing lame and imperfect when view'd out of the proper Point, besides the Reasons just now given, it's so far from being a Fault, that I look upon it as an Excellency in the Work, that when view'd from the Point determin'd, it appear, with due Proportion, straight, flat, or concave; when in reality it is not so.

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XLII. The Manner of avoiding Confusion in reducing Plans and Elevations into Perspective.
XLIII. The Plan of the Fortieth Figure in Perspective.
XLIV. The Elevation of the Forty-first Figure in Perspective.
XLV. One half of the Doric Design in Perspective.
XLVI. The other half of the same Design.
XLVII. The Plan of an Ionick Building.
XLVIII. Geometrical Upright of the foregoing Ionick Design.
XLIX. The Elevation of the Ionick Design in Perspective.
L. A Design of Ionick Architecture.
LI. A Corinthian Design in Perspective.
LII. The Description of a wreath'd Column of the Composite Order.
LIII. A. The Orders of Architecture taken from Palladio and Scamozzi.
Modus

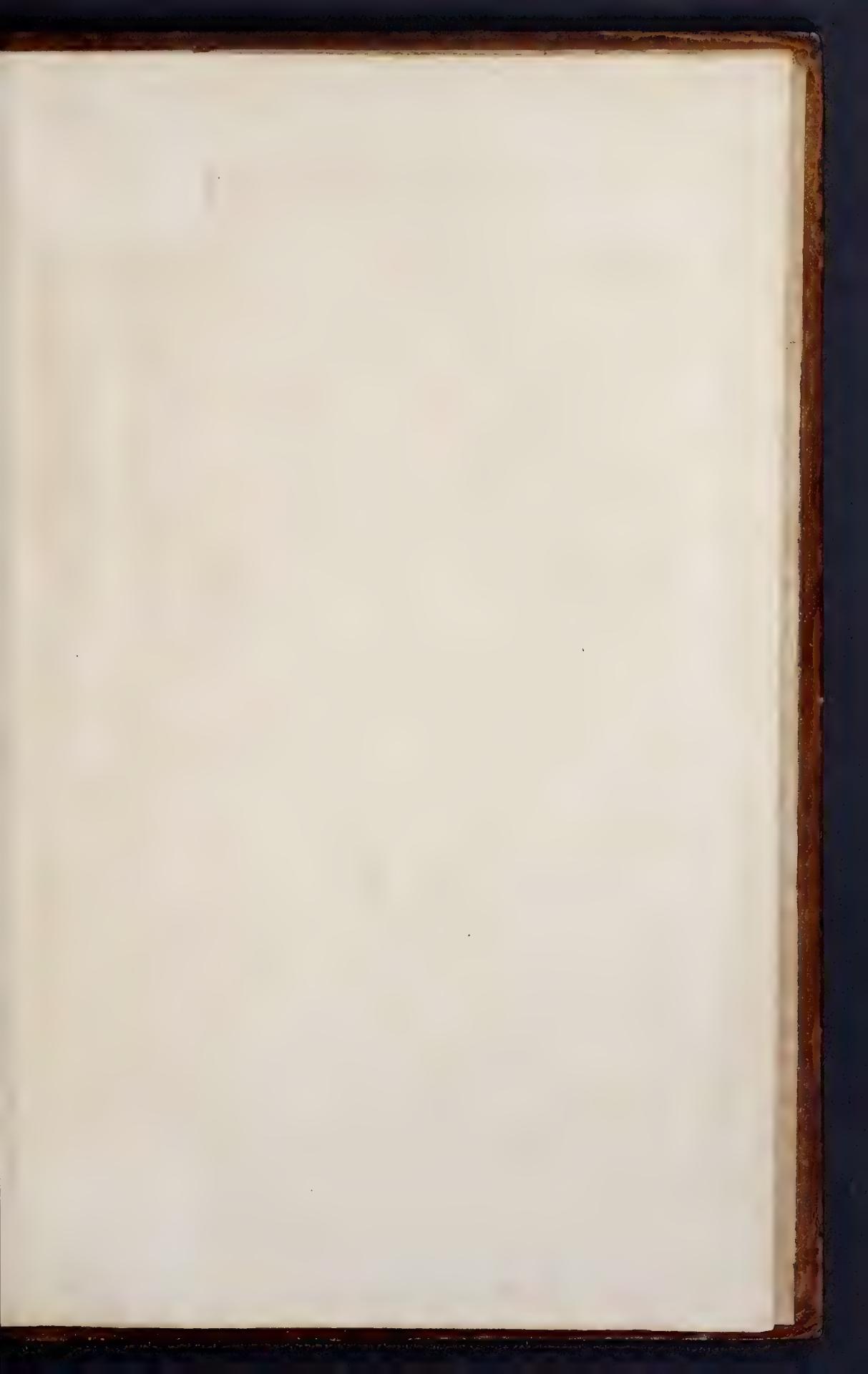
I N D E X.

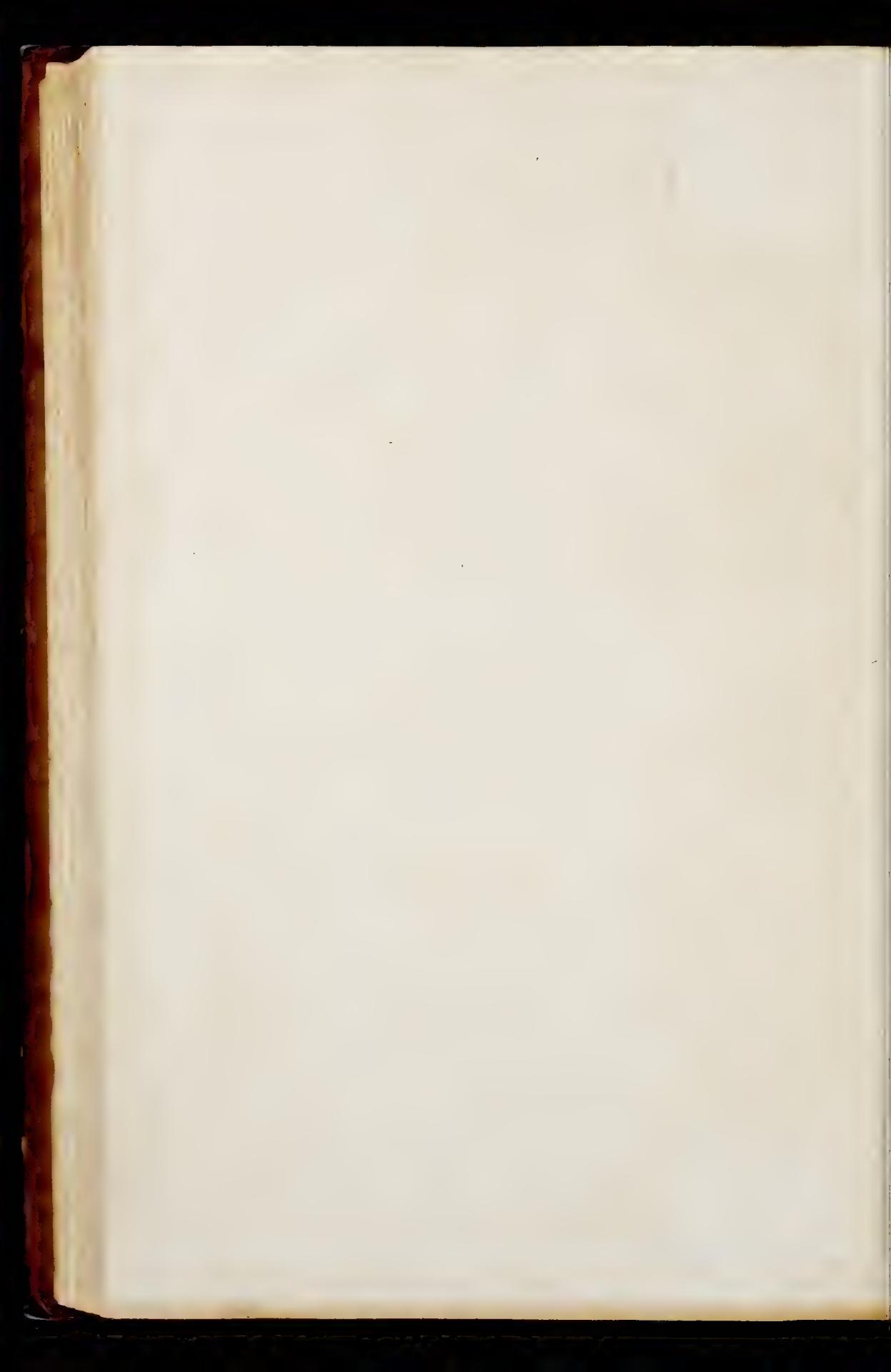
Modus triplex delinandi columnas spirales,
 Vestigia adificii Ordinis Corinthii,
 Elevatio adificii Ordinis Corinthii,
 Deformatio vestigiorum & elevationis adificii Corinthii,
 Adumbratio figure sequentis,
 Edificium Ordinis Corinthii octangulare,
 Vestigia Tabernaculi octangularis,
 Tabernaculum octangulare,
 Modus erigendi machinas que consistunt pluribus ordinibus
 taliiorum,
 De reticulandis telariis, que representent adificia solidia,
 Vestigia adificii quadrati,
 Edificium quadratum,
 Vestigium adificii rotundi optime imminentum,
 Projectio adificii rotundi,
 Vestigium geometricum, ac prima preparatio ad figuram septuaginta primam,
 Elevatio geometrica vestigii precedentis, & secunda preparatio ad figuram septuaginta primam,
 Deformatio vestigii figure sexagesima septima, & preparatio tertia ad figuram septuaginta primam,
 Deformatio elevationis figura sexagesima octava, & preparatio quarta ad figuram septuaginta primam,
 Theatrum representans nuptias Canis Galilee, constitutum
 Roma anno 1685, in expositione Ven. Sacramenti, in
 templo Farnesiano Societatis Jesu,
 De theatris scenicis,
 Aliud vestigium theatri; ubi de modo inveniendis ejus positione,
 Scenio scenarum theatri,
 Elevatio scenarum coram inspectarum; ubi docetur artificium, ut scena obliqua apparent recte,
 Modus delineandi exemplar scenarum,
 Modus reticulandi & pingendi scenas theatri,
 De projectionibus horizontalibus,
 Projectiones vestigii & elevationis mutuli,
 Horizontalis projectio mutuli inumbrati,
 Stylobata Corinthii horizontaliter contracta,
 Columna Corinthia horizontaliter deformata,
 Capitella Corinthia horizontaliter contracta,
 Coronix Corinthia,
 Coronix Corinthia horizontaliter contracta,
 Horizontalis projectio columnae,
 Preparatio necessaria ad sequentem figuram, & ad projectiones horizontales in laquearibus vel testudinibus,
 Horizontalis projectio balustrarum figura octoginta septima,
 cum brevi distantia,
 Horizontalis projectio Architecture in laqueari quadrato,
 Horizontalis projectio tholi,
 Tholus figura nonagesima, cum luminibus & umbris,
 Tholus octangularis,
 Vestigium templi Ludovisianni S Ignatii alma urbis,
 Orthographia templi Ludovisianni,
 Aliae preparationes ad figuram 98 & 99,
 Aliae preparationes ad figuram 98 & 99,
 Aliae preparatio ad figuram 98 & 99,
 Quadrans Architecturae horizontalis in fornice, cum luminiis & umbris,
 Alter quadrans totius operis,
 Modus reticulationis facie in testudinibus,

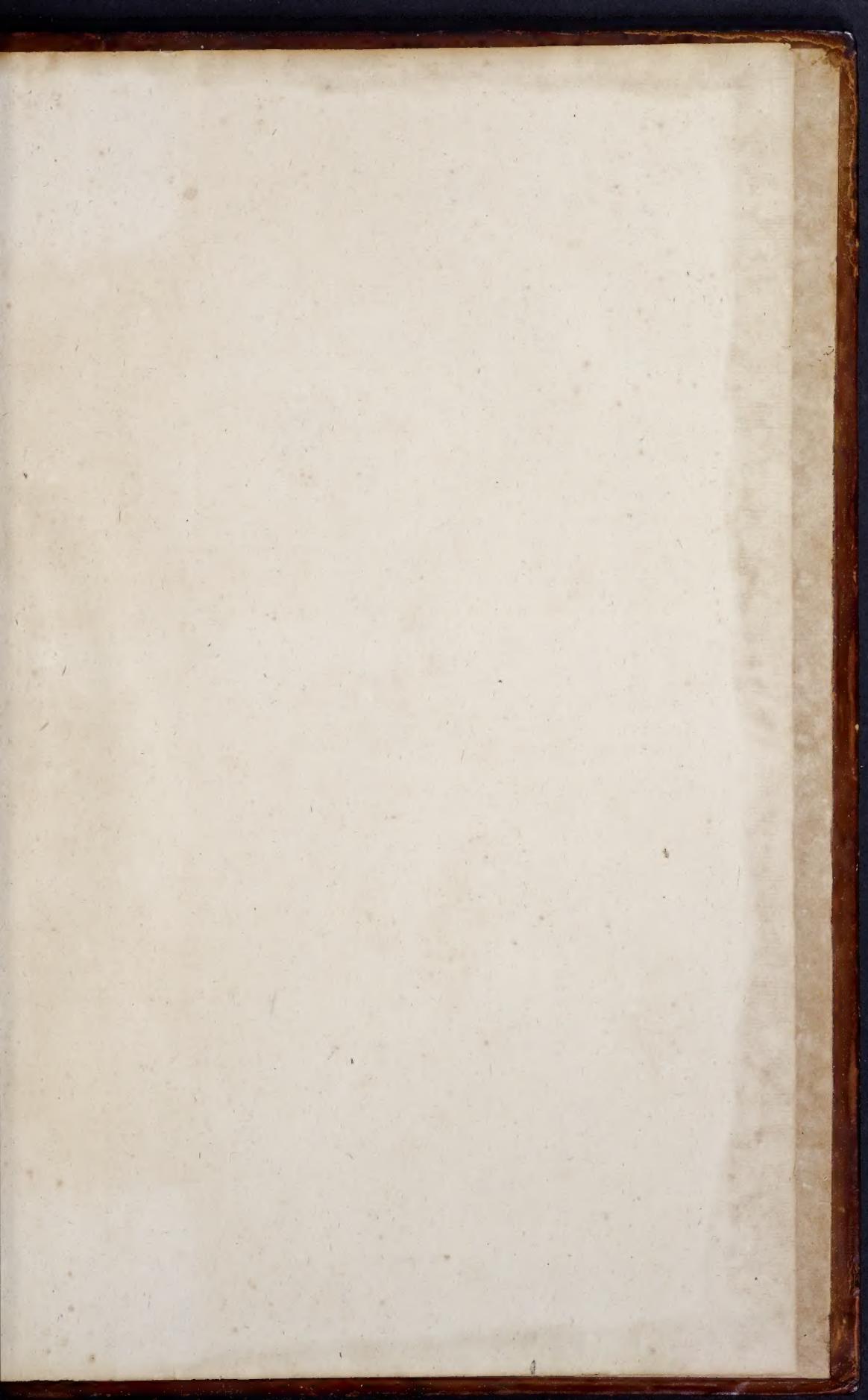
- FIG.
 LIII. B. Three different ways of delineating wreath'd Columns.
 LIV. The Plan of a Design of the Corinthian Order.
 LV. The Geometrical Elevation of a Corinthian Work.
 LXVI. The Perspective-Plans and Upright of the Corinthian Design foregoing.
 LVII. The rough Draught of the following Figure.
 LVIII. Part of an Octangular Work of the Corinthian Order.
 LIX. The Plans of an Octangular Tabernacle.
 LX. An Octangular Tabernacle in Perspective.
 LXI. The Manner of erecting Machines that consist of several Ranges of Frames.
 LXII. Of making the Net-work on Frames, for representing the Architecture as solid.
 LXIII. The Plan of a square Design.
 LXIV. A square Design in Perspective.
 LXV. The Plan of a Circular Work in Perspective.
 LXVI. A Circular Design in Perspective.
 LXVII. The Geometrical Plan, and first Preparation to the Seventy-first Figure.
 LXVIII. The Geometrical Elevation of the foregoing Plan, and second Preparation to the Seventy-first Figure.
 LXIX. The Plan of the Sixty-seventh Figure in Perspective, and third Preparation to the Seventy-first Figure.
 LXX. The Perspective of the Elevation of the Sixty-eighth Figure, and fourth Preparation to the Seventy-first.
 LXXI. A Theater representing the Marriage of Cana in Galilee, erected in the Jesuits Church at Rome, 1685, for the Solemnity of exposing the Holy Sacrament.
 LXXII. Of Scenes for the Stage.
 LXXIII. Another Plan of a Theater, with the Method of finding the Point of Sight therein.
 LXXIV. The Section or Profile of Scenes for Theaters.
 LXXV. The Elevation of Scenes in Front, and how the oblique Scenes are made to appear direct.
 LXXVI. The Manner of delineating the Designs of Scenes.
 LXXVII. The Manner of making the Net-work or Squares, and painting the Scenes of Theaters.
 LXXVIII. Of horizontal Projections.
 LXXIX. The Plan and Elevation of a Corbel in Perspective.
 LXXX. The horizontal Projection of a shaded Corbel.
 LXXXI. Corinthian Pedestals in an horizontal Perspective.
 LXXXII. A Corinthian Column in horizontal Perspective.
 LXXXIII. A Corinthian Capital in horizontal Perspective.
 LXXXIV. A Corinthian Cornice.
 LXXXV. A Corinthian Cornice in horizontal Perspective.
 LXXXVI. A Column in horizontal Perspective.
 LXXXVII. The Preparation necessary to the following Figure, and to all other horizontal Perspectives, whether on flat or vaulted Ceilings.
 LXXXVIII. The horizontal Projection of the Balustrade of the Eighty-seventh Figure, view'd at a small Distance.
 LXXXIX. A horizontal Piece of Architecture in a square Ceiling.
 XC. A Cupola in horizontal Perspective.
 XCII. The Cupola of Fig 90, with its Lights and Shades.
 XCII. An Octangular Cupola.
 XCIII. The Geometrical Plan of S Ignatius's Church at Rome.
 XCIV. The Orthography of S Ignatius's Church.
 XCV. Other Preparations to the 98th and 99th Figures.
 XCVI. Other Preparations to the 98th and 99th Figures.
 XCVII. Another Preparation to the 98th and 99th Figures.
 XCVIII. Fourth-part of the Architectonical Design on the Vault of S Ignatius's Church, with its Lights and Shades.
 XCIX. Another Quarter of the whole Design.
 C. The Method of drawing the Net-work on Vaults.

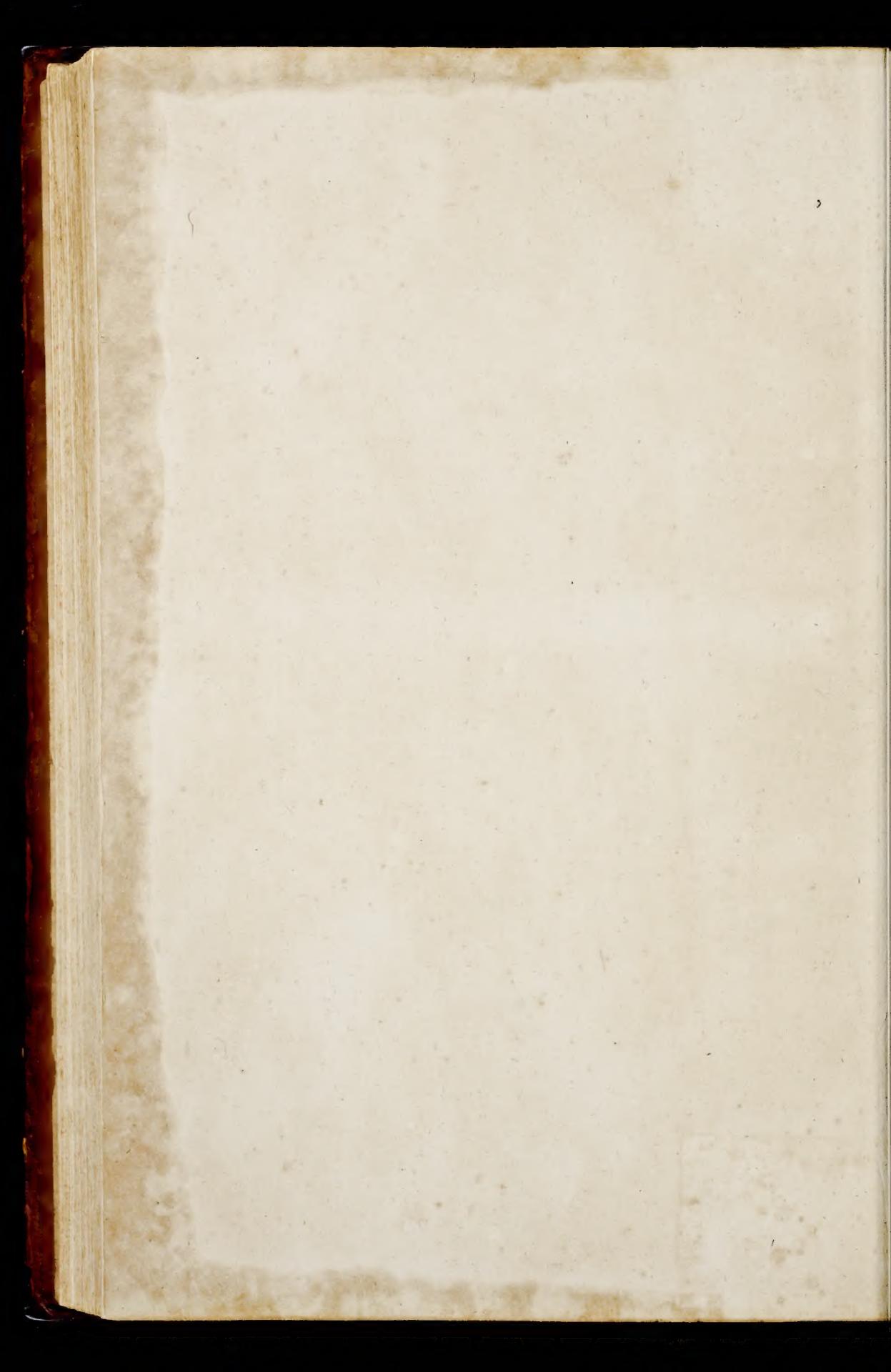
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